

This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

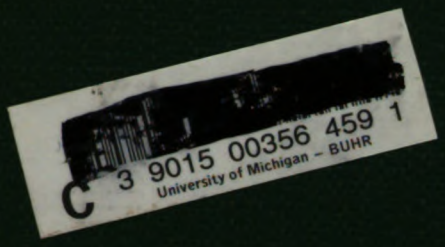
+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`


3 9015 00356 459 1
University of Michigan – BUHR
Digitized by Google

PROPERTY OF
University of Michigan
Libraries
1817
ARTES SCIENTIA VERITAS

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google



Digitized by Google

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

C. A. WILLEY COMPANY

Color Grinders

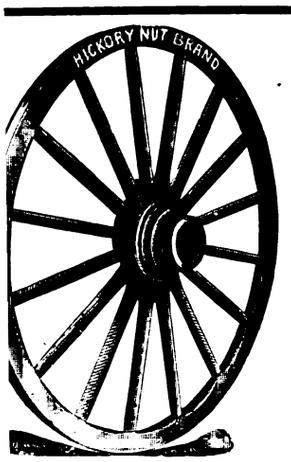
AND MANUFACTURERS OF

SPECIALTIES IN CARRIAGE and CAR PAINTS, COLORS, Etc.

92d St. Cars at Hunter's Point Ferry Pass our Factory.

Hunter's Point, New York City

CALL AND SEE US WHEN IN NEW YORK.



CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

Transfers for all Purposes

SCROLLS, FIGURES, FLOWERS, LETTERS, ANIMALS
STRIPINGS, NUMERALS, CORNERS

"GOOD-AD" WINDOW SIGNS PALM, FECHTELER & CO. NEW YORK CHICAGO

DECALCOMANIE

"GOOD-AD" WINDOW SIGNS PALM, FECHTELER & CO. NEW YORK CHICAGO

SPECIAL NAME PLATES OF ALL DESCRIPTIONS
BUGGY ORNAMENTS IN SETS

No shop is complete without our catalog. Send for one.

Palm, Fechteler & Co.

NEW YORK: 67 Fifth Ave. CHICAGO: 43-45 La Salle St. MONTREAL. E. LIVERPOOL, O.

HEAR YE!
HEAR YE!
HEAR YE!

All ye who labor in the Finishing Rooms of the Carriage and Automobile Industries! The best wearing and most beautiful and lasting finish is obtained by the use of

HARLAND'S ENGLISH VARNISH



The merits of Harland's Varnishes are backed by over a century of progress, and it is the unsurpassed quality of this varnish which has not only given the makers a universally pre-eminent position, but has also made it the standard by which all others are compared.

WM. HARLAND & SON
168 CENTER ST.
NEW YORK

Factories:
Merton, London S. W., England.

Digitized by Google

JOHN W. MASURY & SON

MANUFACTURERS OF

Superfine Coach Colors :: :: and Varnishes :: ::

NEW YORK and CHICAGO

WHITE'S BRAZING SLEEVES

[redacted] MANUFACTURED BY [redacted]

H. F. WHITE, 111 E. Pearl St., Cincinnati, O.

"Not how cheap but how good"

Beckwith-Chandler Company

Manufacturers of High-Grade

COACH AND RAILWAY VARNISHES

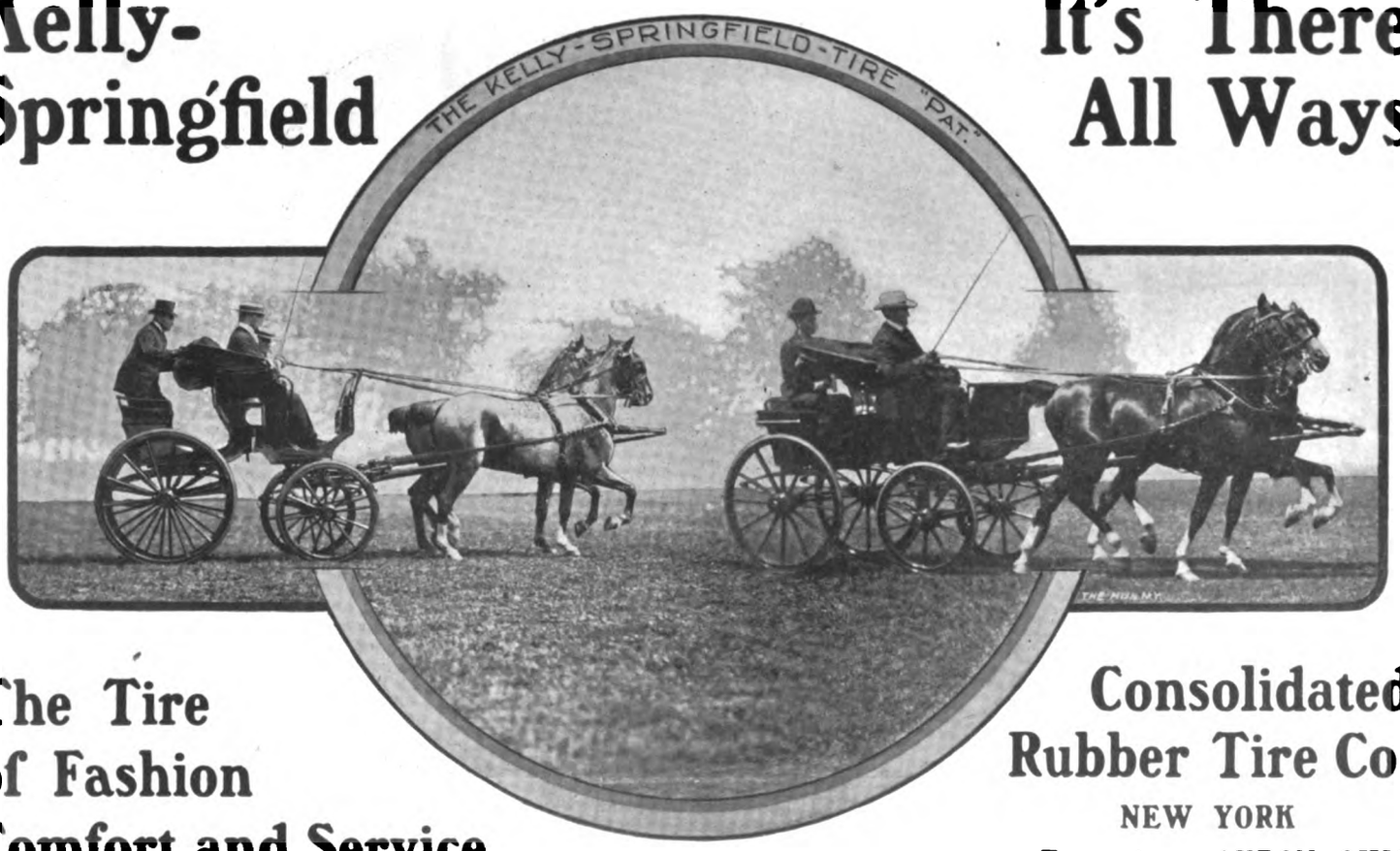
NEWARK, N. J. 201 EMMETT STREET

NEW YORK 320 FIFTH AVENUE

"100 per cent. quality in every can"

Kelly-Springfield

It's There All Ways



The Tire of Fashion Comfort and Service

Consolidated Rubber Tire Co

NEW YORK

Factories: AKRON, OHIO

Digitized by Google

GUM COAT

Solves the Problem of Applying a Color Coat and Insuring a Uniform Elasticity from Primer to Finishing Varnish

Gum Coat is a combination of color and specially treated gums, combined in a manner producing all the essential properties of color varnish and flat color.

MADE IN TEN COLORS
Investigate—To Your Interest

SOLE MANUFACTURERS

F. O. PIERCE COMPANY

12 West Broadway **NEW YORK CITY**

HIGH CLASS ENGLISH VARNISHES

Nobles & Hoare

Cornwall Road, Stamford Street

LONDON

TRADE NOBLES & HOARE NH LONDON MARK

Sole Agents in United States **POMEROY & FISHCER** New York

28 and 30 Frankfort St. (P. O. Box 1224)

Please mention "The Hub" when you write.

Digitized by Google

VALENTINES VARNISHES AND LAWSON VARNISHES

Build a Strong Foundation of Good Varnish and Colors and the Finish will be Enduring

VALENTINE & COMPANY

New York Chicago Boston Paris Amsterdam

TRADE VALENTINES VARNISHES MARK

WING RUBBER CARRIAGE TIRES



are made from tough, durable, lively New Rubber. QUALITY is the first consideration. Our "Wing" Tire will outwear several ordinary rubber tires. The wings (see cut) keep water, sand and grit from working between the channel and the tire, to wear out the tire from underneath. Write for particulars.

GOODYEAR AKRON, OHIO TRADE MARK.

The Goodyear Tire & Rubber Co.
Carriage Tire Dept.
Akron, Ohio

BRANCHES: Boston, New York, Buffalo, Chicago, Cincinnati, Detroit, St. Louis, Denver, Los Angeles, San Francisco.

81 Years' Experience in Every Can

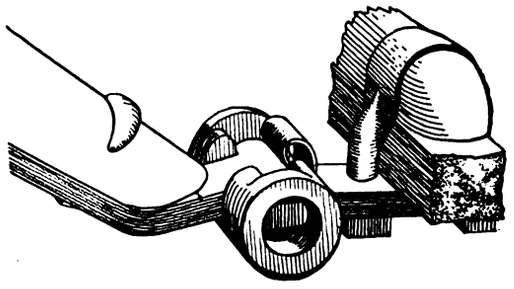
E.S. 1827 & CO.

Edward Smith & Co.

Red, Green and Black Color Varnishes

New York 45 BROADWAY

Chicago 59 MARKET ST.



Warner Thill Coupler

THE only "quick shift" coupler that is practical. Adapted to light and heavy vehicles. Made in two sizes, of forged steel. Simple and durable, the only spring being an anti-rattler. Removed by bringing thills to an upright position. No more expensive than other good couplers. "Absolutely noiseless." Write for samples and prices.

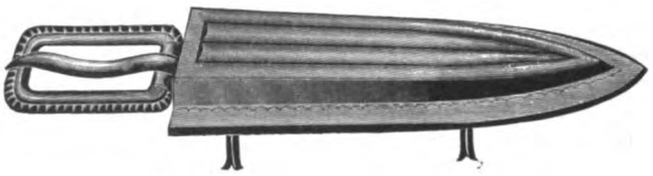
THE FORT PITT NOVELTY CO., AMBRIDGE, PA.

Please mention "The Hub" when you write.

Digitized by Google

You Will Never Know

how good these Loops are until you try them out.



¶ The BUCKLE LOOP shown is our Number 8. Nobby, isn't it?

¶ Number 9 Strap Loop is its running mate.

¶ Then there is Number 14, Double Buckle Loop.

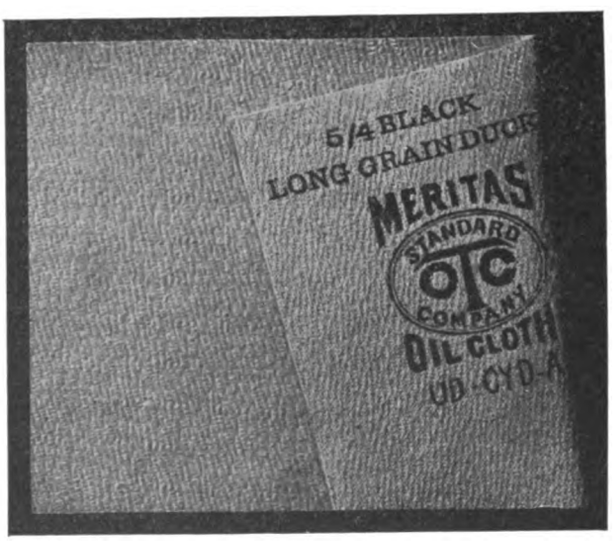
¶ All are Patent Leather, Silk Stitched and are capable of going in fast company.

CRANDAL, STONE & CO.

BINGHAMTON, N. Y.

MERITAS

CARRIAGE ENAMELED OIL CLOTH



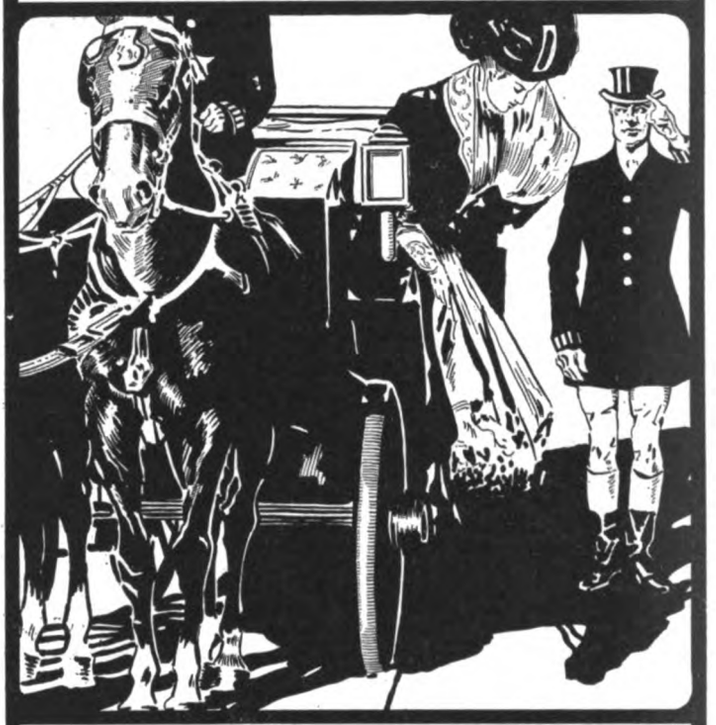
¶ This trade mark on the back of oil cloth guarantees a perfect product that **can't** crack, scale or peel under any conditions.

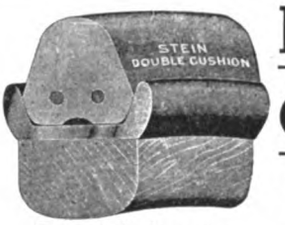
There is only one **"MERITAS"**—be sure you get it.

Standard Oil Cloth Co.

320 Broadway, NEW YORK.

STEIN DOUBLE CUSHION TIRE





Patented 1892-1902.

DOUBLE CUSHION

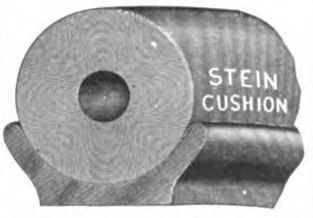
is no mere name or fancy, but an established and recognized fact in connection with the

STEIN DOUBLE CUSHION TIRE

Seeing, they say, is believing, but to appreciate the double cushion reality existent in our tires—ride over them. What was previously an idea then becomes an establshed fact.

The Stein Double Cushion Tire will be a big talking point in your 1908 line. Be wise and get next to our proposition.

The most serviceable rubber tire on earth.



STEIN DOUBLE CUSHION TIRE CO.

Akron Ohio

THE HUB CURLEY

Please mention "The Hub" when you write.

Digitized by Google

CONFIDENCE

All over this broad land you will find that the vehicle buying public have confidence in the quality of goods bearing the name *Studebaker.*

They know that they can depend on a *Studebaker* wagon or buggy or harness.

We consider the confidence of the vehicle buying public in goods bearing the name of *Studebaker* as one of our most valuable assets and it is our constant endeavor to continue to deserve that confidence.

We test the quality of every kind of material going into our vehicles and our inspection of finished work is most rigid and painstaking.

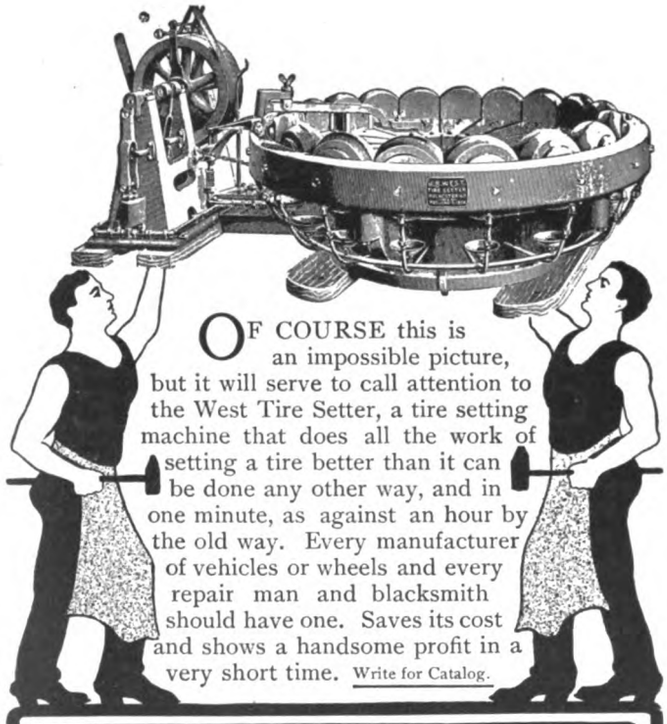
We do not believe that any other maker of vehicles so jealously guards the quality of his goods.

The dealer who builds up a business selling *Studebaker* vehicles has a trade that is permanent and worth while

Studebaker Brothers Manufacturing Company

South Bend, Indiana, U. S. A.

Largest Vehicle Manufacturers in the World

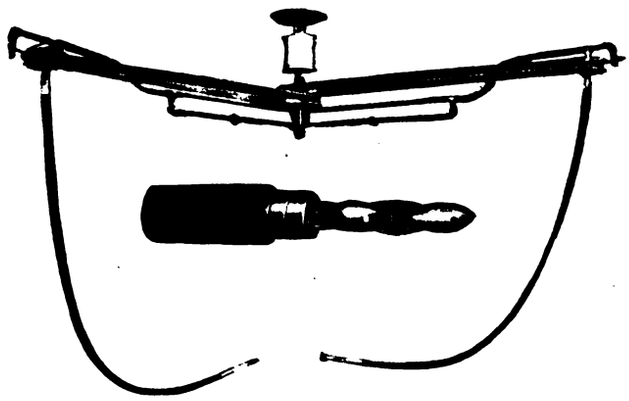


OF COURSE this is an impossible picture, but it will serve to call attention to the West Tire Setter, a tire setting machine that does all the work of setting a tire better than it can be done any other way, and in one minute, as against an hour by the old way. Every manufacturer of vehicles or wheels and every repair man and blacksmith should have one. Saves its cost and shows a handsome profit in a very short time. Write for Catalog.

The West Tire Setter Co.
Rochester, N.Y.

There Are Others

BUT NONE SO GOOD



THIS IS THE

RADIAL BORING MACHINE

THAT GIVES SATISFACTION.

SPECIAL PATENTED PLUG BIT AND OTHER ATTACHMENTS IF DESIRED.

STEEL LINK CORE, STRONG AND DURABLE

PRICES:

Double Arm Machine, with Chuck.....$85.00
Single Arm Machine, with Chuck..... 65.00
A Discount of 15 per cent. when cash accompanies order

The Flexible Shaft & Tool Co.
BELLEFONTAINE, OHIO.

Please mention "The Hub" when you write.

Digitized by Google

The Hub

Copyright, 1908, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. L. NEW YORK, APRIL, 1908. No. 1.

THE TRADE NEWS PUBLISHING CO. OF N. Y.
Publishers of THE HUB

J. H. Wright, *President.* G. A. Tanner, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

Jacob H. Klein, *Technical Editor.*

REPRESENTATIVES:

J. Henry Klune. J. G. Tanner. B. H. Hull.

The Hub is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of Trade News Publishing Co.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

France.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

Germany.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

England.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

Storage Receipts.

In the larger cities throughout the country it is customary for carriage builders to take vehicles on storage, entering into an agreement whereby they receive a certain amount per month and giving receipt covering goods and understanding. This custom to all intent and purpose seems reasonable and fair, but in arriving at these conclusions builders should go beyond their personal knowledge of such things and consult the State statutes for their personal protection. In New York State the statute says that any one who stores goods for profit is classified under the law as a warehouseman, and as such, a warehouse receipt should be given for goods.

As receipts for goods are negotiable no builder should ever deliver goods except on presentation of receipt. It might be that a paragraph could be inserted in the receipt to the effect that receipt is not negotiable except party issuing same be notified at the time of transaction that record of owner of goods is correct.

In New York State a builder can become seriously liable if his business methods are in any way lax. For instance, a case has come to our notice of an expensive foreign chassis that was put in storage. No receipt was given at the time, but later the builder received instructions to equip the chassis with a certain kind of body and ship to another city at a specified time, the party storing chassis requesting a receipt for same. Before the day of shipment, however, the receipt had been negotiated and the car was delivered to original holder. Then Mr. Man with the receipt calls upon Mr. Builder for his goods, and where does Mr. Builder get off?

While there is no precedent that can be cited of a case of this kind going against a builder, still it is well that builders who make a custom of storing vehicles should faimiliarize themselves with the State statutes on this point to avoid any future misfortune.

What Is Originality?

So-called originality of design in carriage construction has of late years come to mean less than formerly. Those establishments in which in former years original designs formed the basis of most of the work turned out have not succeeded in holding their trade as measured by volume of business and have not apparently held their own against the invasion of grades of work in which original conceptions played a subordinate part.

And yet there is something connected with fine carriage construction which involves the realization of ideals as manifested in what is understood by original designs. A superb carriage which did not show, at least to the expert, some evidence of what the expert would regard as originality, would be looked upon by him and his craft as a technical failure, as commonplace.

One practical difficulty in the pathway of designers is that of keeping their designs within the limits of popular taste. Departures from cultivated taste are generally failures. Like many a theatrical play it is frequently impossible to know in advance what is popular or will be. In other words, there are no hard or fast lines, or what might be termed a scientific basis for designing improvements in contour or the tout ensemble.

Notwithstanding all this, our designs are gradually approaching the ideal demands. To realize this it is only necessary to critically examine some of the recent superb carriage exhibits.

Look Pleasant.

Optimism has long been characteristic of Americans. It is inculcated from childhood. It is encouraged and applauded wherever seen. It is regarded as a virtue and as evidence of progressiveness and certain success. The mental habit of not recognizing untoward conditions or being visibly influenced by them is encouraged in all the associations which men have with each other. To laugh down fear is a species of excusable egotism.

All this means that it is well to sprinkle a little salt on what people say about business—present and prospective. Just enough salt to keep it fresh. It is highly creditable to Americans that they are almost without exception making light of existing conditions, regarding them as

Digitized by Google

but a passing phase. But a good deal is being said as to business as it is and is likely to be which is not Simon pure fact.

Each man in business feels it is a sort of duty to keep a stiff upper lip—but it takes a conscious effort to do so sometimes, and one of those times is right now.

And yet these expressions of faith in a right outcome, of these statements of fair to good conditions are all practically true, when we have regard to the conditions which exist.

Heavy and continued rainfalls overflow the banks, and long continued drouth destroys vegetation. Commercial and manufacturing vegetation is now suffering.

The united determination and conviction of the vast business interests represents a power that cannot be measured on scales. That present conditions may disappear is the conviction of the country at large, and the anticipations will be realized.

Not So Bad.

From a careful perusal of the proceedings of the recently-held vehicle and implement conventions throughout the West, if they correctly represent the actual state of mind and business conditions of those in attendance, it does not appear that there will be such a disastrous falling off in demand as might be expected. From some official utterances made it would appear that no decided progress can be expected for the present in enforcing understandings as to shorter credits and discounts.

While the necessities for readjustment of the business relations between buyers and retailers and between retailers and manufacturers are urgent, it is believed that the time is not propitious for any decided or aggressive effort in that direction. Manufacturers are too anxious for business and retailers are too anxious for customers. So far as buyers and retailers are concerned the boot is on the other leg this year. A year ago the builders were more in a position to dictate terms and conditions than they are now, but they were not then quite ready to dictate.

Tendency to Good Looks.

The tendency to impart a finer and more desirable finish to first-class wagon work is natural under the stimulating competitive influences of to-day. This tendeency is especially seen in delivery wagon work, which is approaching fine carriage work in quality and effect. Even in ordinary farm wagon work more care is being taken and more coats are applied and with an exactness which the delicate nature of paints and varnishes demand. All lines of wagon work are under the influence of this spirit of progressiveness which is aiming to approximate wagon and carriage work in point of finish.

Of course the nature of the material used in ordinary wagon work and in carriage work forbids the same degree of finish or the same method of application of the various coats. But so far as the material will permit the surface is made to respond to the skillful application of the most appropriate products of the paint factory.

Encouraging Signs.

Among some of the favorable signs in the carriage and its accessory industries are the increases here and there in capital stock, in the placing of orders for wood-working machinery, in the strengthening of firms here and there with new men, in the outgoing of representatives for business, the announcement of new styles of work, and in a betterment of shop equipment. These are straws only, but they indicate the direction of the wind.

A Matter of Adaptation.

The utilization of electric power in shops is one of the reasons for the approach to greater shop economies, but it is only one. Shop practice and shop methods have been considerably revolutionized within a few years. Among other reasons is the greater adaptation of mechanical appliances in the shape of equipment and tools, to the specific work in the various departments. Were the history of the development of tools, using the word in a large and liberal sense, to be carefully studied, it would be seen that the wise adaptation of tools to specific work has been the means by which a number of economies have been worked out—not merely in the sense that more work can be done by complicated tools than by hand.

The adaptability of certain lines of tools, which are almost entitled to be regarded as machines, to given lines of work, by which various modifications of the machine accomplishes various results with material, is perhaps the source of more practical economies than any other line of mechanical improvements afford. We are accustomed to overlook or forget the importance of these points in striving after shop economies. The manufacturers of carriage parts and accessories use them more than those who merely associate parts.

Along this line there is considerable room for further economies in shop practice, and a study of shop equipment now in comparison with shop equipment five or ten years ago shows what economies are being subserved.

Tariff Eliminated.

It is a saying that business always suffers in presidential election years. This saying grew out of the uncertainties as to the policies of an incoming administration as to tariff legislation. For decades past tariff legislation possibilities were the underlying elements of uncertainty.

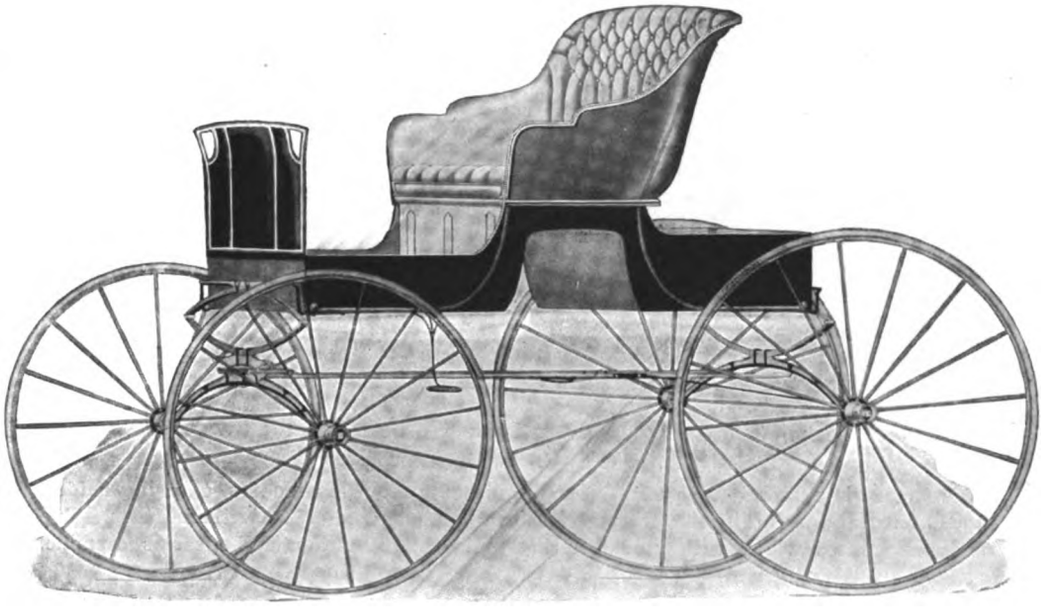
Apart altogether from the merits of the question it appears to be pretty generally conceded that there will be no actual or specific legislation this session of Congress, possibly not even legislation looking to the appointment of a commission or tribunal to suggest or recommend such legislation. There is, therefore, no occasion for general unrest on that point. The common opinion of the business interests seems to accept this result and there is a sense of temporary relief among manufacturing and commercial interests because of this, even where a strong desire exists for revision or the appointment of a commission. Whatever unrest may exist will have its origin in other questions and other possibilities.

Thou Shalt Not Steal.

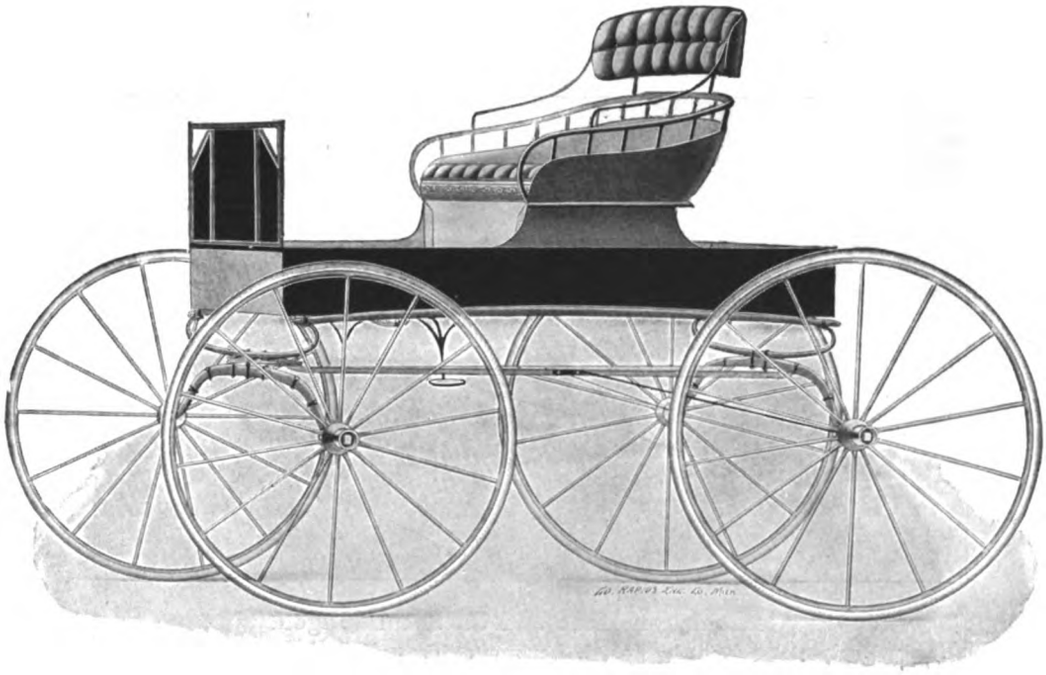
A trade journal claiming any respect for itself and respecting the rights of others never stoops to look on the slate of its rivals. It scorns the meanness and the dishonesty of this species of journalism. The "yellow" press is bad—and has to be tolerated—but every man's hand should be raised against the purloiner and pirate, who lives by removing his neighbor's land mark. A London carriage trade journal has patronized The Hub's columns and working drawings very liberally during the last twelve months by misappropriating them to its own pages without acknowledgment to The Hub. It is to be hoped that those referred to will understand that "a wink is as good as a nod to a blind horse," and that The Hub's working drawings and technical and practical articles have to be studied out, expensively cut and set up, and are not intended to act as a rich padding to the columns of a journal whose annual subscription is twice that of The Hub, which English readers and subscribers of this journal should note.

Digitized by Google

Illustrated Carriage Section, April, 1908

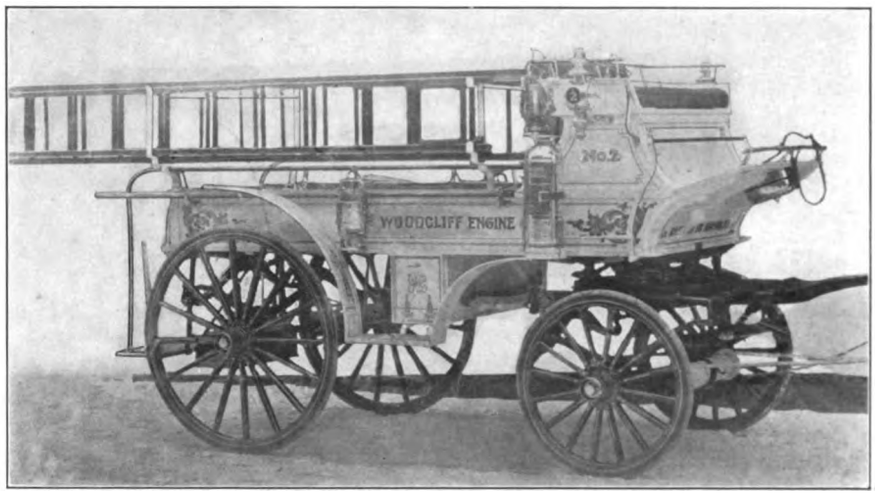


Low-Wheel Auto-Seat Cutunder Buggy.
Built by Regal Buggy Co., St. Louis, Mo.



Three-Quarter Side-Bar Bike Wagon.
Built by T. B. Tebbetts & Sons Carriage Co., St. Louis, Mo..

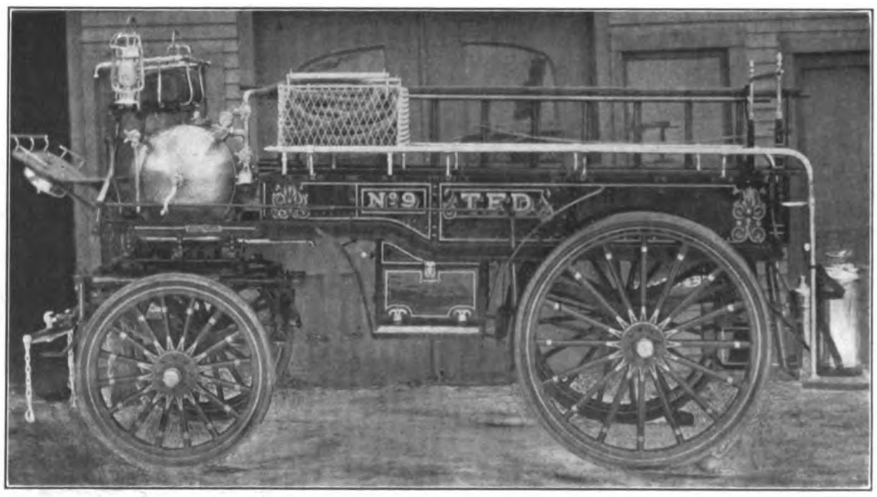
Digitized by Google



Hose Wagon To Be Drawn by Horse or Man Power.

Built by A. F. & S. C. Stewart, Rochester, N. Y.

This wagon is equipped with two fire extinguishers, extension ladders, climbing ladder, hooks, etc., and is furnished with reel for hand rope, and tiller, as well as shafts. The body is painted white, with gold lettering and ornamentation, and gear is carmine.

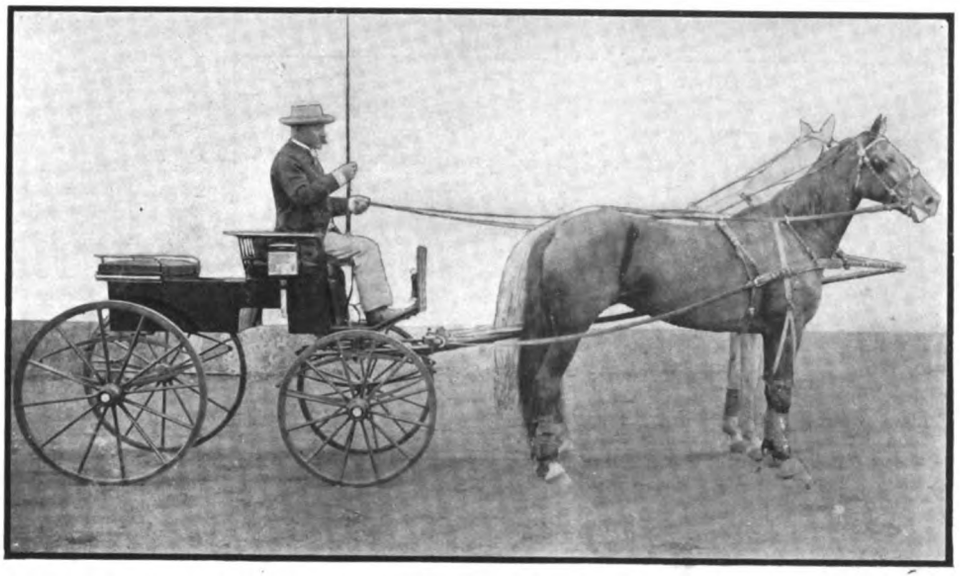


Combination Hose and Chemical Wagon.

Built by Jos. J. Lecompte, Troy, N. Y.

This illustration presents a wagon built for the Troy Fire Department by a local concern, to whom it reflects credit. The body is steel construction throughout, as is noticeable in picture. Wheels are fitted with 3 in. solid rubber tires. The cost of wagon was $2,000.

Digitized by Google

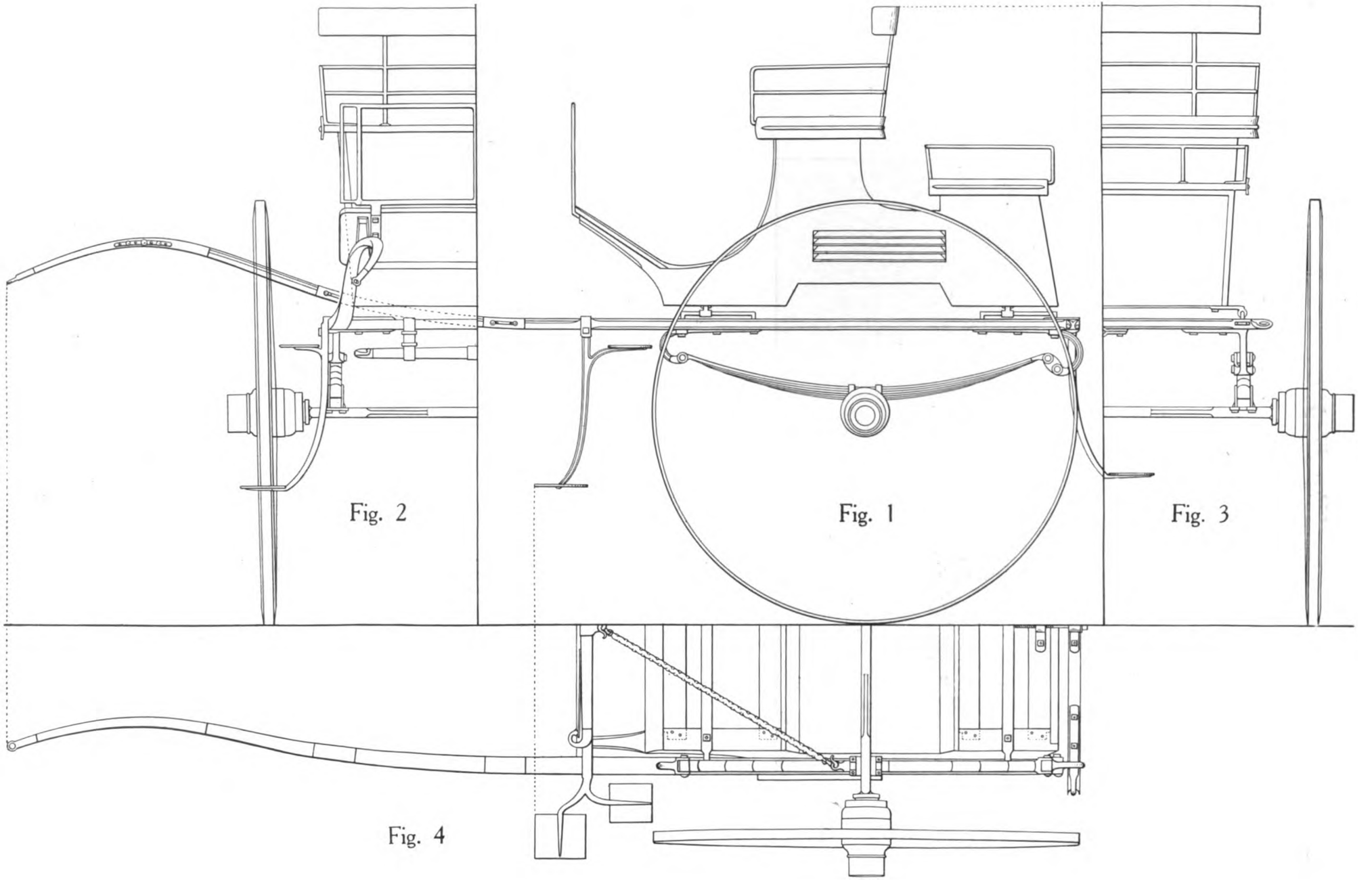


Hungarian Racing Carriage.
Described on page 9.
Electrotype $2.00.



Four-Passenger Park Wagon.
Provided with doors.
Electrotype $2.00.

Digitized by Google



WORKING DRAFT OF A TANDEM CART.

Scale, ¾ in. to the foot.

Description on opposite page.

Digitized by Google

Wood-working and Smithing

DESCRIPTION OF WORKING DRAFT OF A TANDEM CART.

Drawings on this and opposite pages.

Although temporarily the motor car has elbowed the horse-drawn carriage to one side, yet with all the pomp of power which the motor car is exercising in the world of fashion to-day it cannot vie with the grace and beauty of a carriage appointed with high bred and finely actioned horses, and crowned by the occupancy of richly attired ladies.

The motor car has not been designed yet, and there is small chance of its ever making its appearance, that will stand comparison with the animated picturesqueness of such carriages as the aristocratic barouche, or the park victoria, with their rich equipment of prancing steeds and handsome women. Against such a picture the motor carriage is simply a benumbing and deadened competitor.

Therefore, carriage builders for the horse can take grace of heart, for all the talent they can command will be fully occupied in catering to the quickened tastes of a new public. The lordly four-in-hand drag is still the monarch of the road, while in graceful following comes the tandem driving cart. These are the real vehicles of driving sportsmen, and show off the fine skill of the fair sex in handling the ribbons as well as the ability of gentlemen deeply versed in the mysteries of the capabilities of horseflesh.

In the travel of the motor carriage the sound of its horn is that of a lifeless voice, while its speed is winged in the track of an evil smelling odor and impresses the unwary as being more of a messenger of danger and death than an agent of pleasure in its snortings to cover distance and connect points. In the motor carriage there is nothing of the exhilaration experienced in the four-in-hand coach as it whirls through country villages and ever and anon bringing into view flowered hedgerows and rich meadows carpeted in nature's finest verdure and breaking up into view panoramas of picturesque beauty.

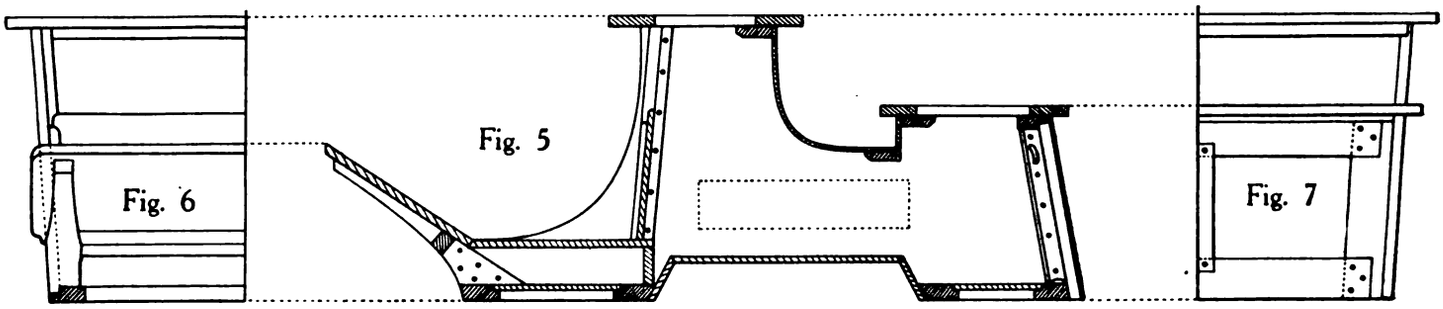
Nor can the motor carriage afford the driving pleasure offered in the tandem cart, and no bugle horn heralds its approach, but only the throatless hollow bellowing of an automaton.

There is every reason to expect that a wide return to the use of pleasure horse-drawn carriages is in the offing, and is gradually working itself back to public favor. So there is some truth in the old saying that "He who fights and runs away, lives to fight another day."

The design of a tandem cart given herewith has nothing of the ponderosity usually associated with this style of two-wheeler. In making the draft it has been sought to bring the size and strength of the carriage within the dual uses of single and tandem driving, and with that object the body has been cut up in its surfaces so as to bring it well within the balance of the one horse without his having the appearance of his being overtrapped.

Fig. 1 shows the elevation. The body is made solid sided, and the venetians worked out in the solid. The brackets are made individually and half-lapped to the side of the body and set square to its front and tapered to a central square line. The body is made to balance on sliding irons, which in the elevation are shown forward of the center, to give a longer balancing line to the movement of the body behind.

It is a singular thing, but no more strange than true, that the balancing of two-wheeled work is 95 per cent. "rule of thumb." The "see-saw" lessons of our childhood never strike the average coach maker, that on the principle of that innocent pastime centers the science of two-wheeled suspension. Where there were two boys at one end of the plank and one at the other, the one boy had to have a longer length of plank from the fulcrum to counterbalance the greater weight of the two boys at the other. This is, mechanically, "mother knowledge," but from it the correct principles of the mechanics of two-wheeled carriage suspension can be correctly deducted.



Working Draft of a Tandem Cart. Scale, ¾ in. to the foot.
Described on this page.

In balancing two-wheeled dogcarts with fixed bodies the front seat is made to slide back from 8 to 10 in., so as to bring the weight sufficiently over the axle to lift the shafts to a poise, not to be affected by the motion of the horse's shoulder action. In these bodies the shafts are fitted with relief springs, and are centered on fulcrum bearings. But in a tandem cart, as the working draft shows, there is no such provision, the under carriage being framed and rigidly fixed. The body is made to slide back when balanced for one, two or three riders, or forward, as the case may be. The full sliding travel of the body is never more from the center socket bearing than 4½ or 5 in., which is sufficient to bring the weight of body and riders to balance evenly over the axle, and to lift the shafts at the tug away from the shoulder action of the horse.

But the subject of balance is so far reaching, and of such wide scope, that volumes might be written on it, so that nothing beyond a marginal reference to it can be gone into here.

The suspension is on grasshopper springs, which are deadlocked in front, the scroll iron jaw being forged to take the barrel eye of the spring, while the eye of the spring behind is open eyed or jawed. The back scroll iron is also forged with open jaw to take a robin on which the spring works and lengthens to deflection.

The seat rail is forged in double tier, with the back rest forged

Digitized by Google

to the seat rail. The dash is a square forging, with center bar, as shown in drawing, the feet taking their bearing on the inside of the bracket. The top of the body at foot board and side is strengthened with half-round plates. The corner should be stiffly forged at the bracket joint for strength. The back of body is strengthened with inside corner plates, chains, or quadrant iron may be used for holding the door when down.

Fig. 1 shows the side elevation; Fig. 2, half front; Fig. 3, half back; Fig. 4, half plan; Fig. 5, inside elevation of body; Fig. 6, half front elevation of body; Fig. 7, half back elevation of body.

Dimensions of gear: Length of grasshopper springs, 4 ft.; number of plates, six; width of springs, 1¾ in.; compass over all, 6 in.; depth of front scroll to center, 3¾ in.; hind, 5¼ in. Height of wheels, 4 ft. 8 in.; tires, 1½ in., other sizes to Warner standard.

Length of axle over collars, 46 in.; over solid flaps, 38½ in.; size of axle, 1¼ in. full.

Width of hind under carriage to center of sliding irons, 37 in. Length of shafts from bar, 6 ft. 2 in.; width between bar, 34½ in.; between points at tugs, 24 in.; length of hind carriage over back and front bars, 5 ft. 5 in.

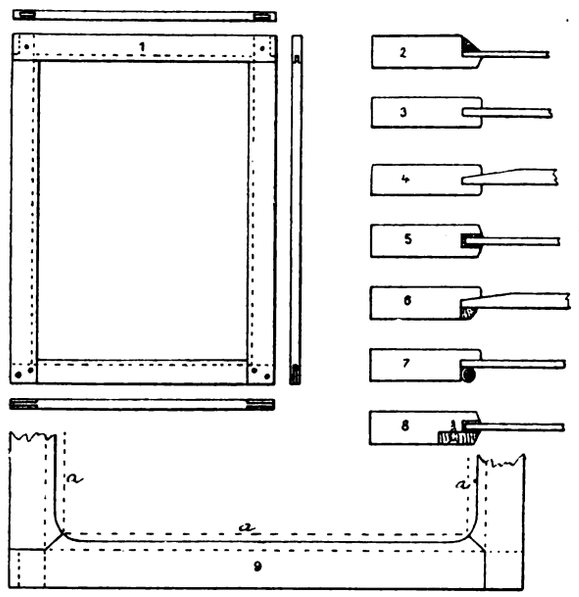
Dimensions of body: Length of front bottomside, 16 in.; span of arch on bottom, 22 in.; length of hind bottomside, 14 in.; length of bracket from corner of body, 15½ in.; width of footboard, 14 in.; depth of hind part of body, 15 in.; width of seat, 15½ in.; width of back of hind boot, 13 in.; depth of front body, 23 in.; width of neck of boot, 11 in.; width of seat, 16½ in. by 40 in. long. Length of hind seat, 38 in.; depth of seat rail, 5 in.; the rail extends around the seat. Depth of front seat rail, 7½ in. in front; at back, 8 in.; depth over back rest, 16 in.; width of body on bottom, 33 in.; on top, 36 in.; track of wheels, 4 ft. 8 in.

CONSTRUCTION OF GLASS FRAMES.

Translated from "Der Wagenbau."

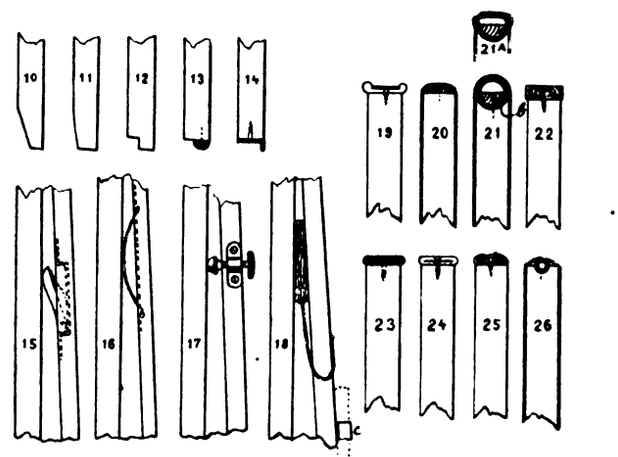
The frames of windows play an important part in the construction of carriages, and builders devise various methods for preventing the annoyance of rattling window frames. This article treats especially on this subject, and various modes of construction of frames and anti-rattling devices are illustrated.

The making of window frames demands at all times the attention of a careful and skilled workman, and the best wood should be used. For cloth covered and painted frames oak and ash are used, and for natural finish, oak, ash, mahogany or teak wood. The stuff for single frames must be cut, as near as possible, from select wood and care taken to have the heart on outside as well as on inside, thus preventing bending of frame.



The manner of framing is correctly presented in Fig. 1, where is shown the upright pieces passing through the upper cross piece. However, it is immaterial whether this method is followed. It may be framed as below. The accompanying illustrations show sections of a variety of frames. Fig. 2 is a plain frame, with triangular strip nailed against frame in rabbit. The sketch Fig. 3 shows the most common way of making frames intended to be cloth covered. When glass with polished face is used it is advisable to cut the groove in a somewhat conical shape, as shown in Fig. 4. If this is not done moisture is liable to collect in vacant space which necessarily remains in the groove. Fig. 5 shows a section of frame as built for omnibus or automobile. These frames are made with a large groove inlaid with rubber. Fig. 6 shows another style, wherein the window glass is fastened with glass stick or molding. The use of this molding is advantageous when frame is cloth covered or when it is necessary to put in new glass. Fig. 7 is a form similar to Fig. 6 excepting that a thin tube is substituted for molding.

With frames constructed as shown in two last illustrations a workman can readily secure the glass should it become loose. The last construction, as shown in Fig. 8, is practiced in the building of railroad and street cars. The frame, of course, must be made somewhat heavier to allow for the thicker and larger glass and rougher usage. In such window frames rubber is laid in groove and the glass pressed securely in place.



The carriage trade in the past few years have adopted the round-cornered glass frames, a form which adds considerable to the work of making frames. Fig. 9 is a diagram of such a frame which, because of the round corners, must be worked out of wider material than is actually necessary, as shown by dotted lines, and the groove for glass must be cut deeper than ordinarily.

For the purpose of setting the window frame over rail on the door it is usually necessary to plane off one side of the lower section of frame as shown in Fig. 10, but so as not to weaken the frame less bevel, as in Fig. 11, is advised. There is often little space for window grooves, which necessitates the finish of the under part of frame as shown in Fig. 12, but a corresponding rubber seat must be provided for it down in the door. A more lasting method is to secure to the bottom a half-round metal molding, as shown in Fig. 13. It occurs in certain vehicles, where lightness is an important consideration, that a recess like that shown in Fig. 12, or the addition of a molding, as appears in Fig. 13, is undesirable. In such cases an angular piece is secured to bottom frame, as shown by Fig. 14. This method is practical and durable and, especially, provides ample room. The doors can be made from ⅝ in. to ¾ in. lighter, and still be durable, by following these suggestions.

We shall now describe several methods designed to prevent the rattling of window frames. Common patterns are shown in sketches 15 and 16. These are ordinary steel springs which are let into the door pillar. They are very popular and give good service. Fig. 17 illustrates an entirely new device, which is applied to automobile frames. It is composed of a screw having a rubber buffer on its head which contacts with window frame.

Digitized by Google

It is secured to door pillar. This is neat and effective, and as is evident, the screw must be turned back before window will drop. Fig. 18 shows another popular, simple and secure arrangement. This is simply a cloth covered wedge, which is placed between frame and pillar and held by a silken cord. When not in use it is placed in a small leather pocket, as shown at c. Many first-class carriage builders use this device.

We shall now familiarize our readers with a few methods of edging that part of the frame which bears against the door pillar. Fig. 19 is a rubber strip having both edges rounded, and is secured by small screws. Fig. 20 is a flat half-oval rubber strip, fastened to a frame before covering. A very good system is presented in illustration Fig. 21 and is called the Girard system, and is only suited for cloth covered frames. In this type the rubber tube is let into the edge of frame to half its thickness and a small half-round molding, b, is inserted and nailed through the rubber to frame, the whole being then covered. Fig. 21A shows the form this style assumes when in use.

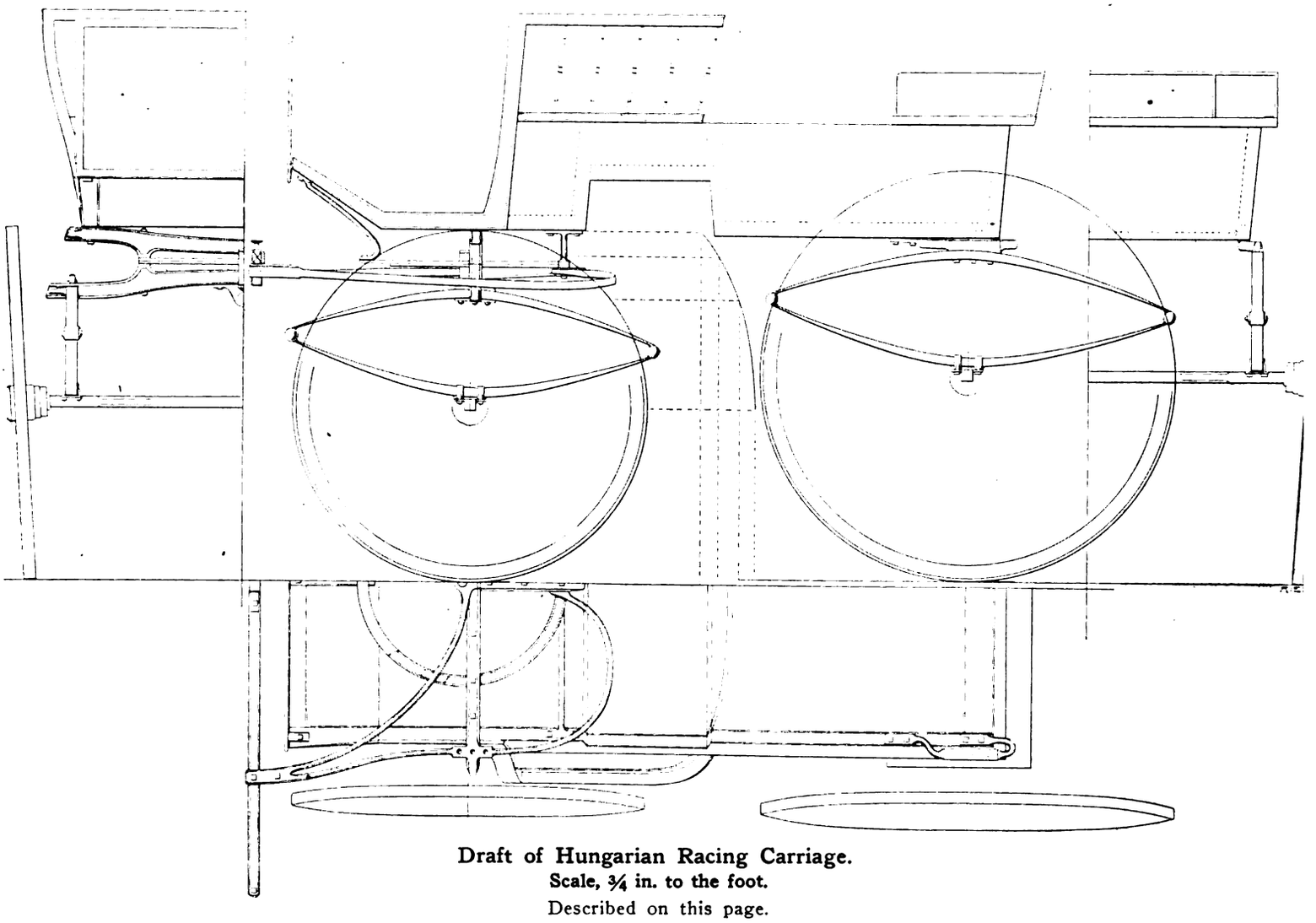
Fig. 22 is an inexpensive arrangement which is most desirable for ordinary carriages. This is a wood strip fastened to the frame. Fig. 23 shows a flat cloth-drawn window strip, which is screwed to frame. Fig. 24 is a similar style, but is of rubber with a metal strip in center. Fig. 25 is a form similar to Fig. 23 only that it is made oval, which permits of easier sliding. Fig. 26 is another simple elastic system which fills its purpose admirably. This way requires that a half-round groove or channel one-half the size of a thin rubber tube be cut in side pieces of window frames.

DRAFT OF HUNGARIAN RACING CARRIAGE.

Illustrated on this page.

Carriage builders of this country will no doubt be interested in the draft of a racing carriage, presented on this page. Although of no value to them, materially, yet it illustrates its cumbersome proportions as compared with the light, one-man racing wagon so familiar to the drivers of this country, and will be of value to some of our foreign subscribers who may have occasion to build a vehicle of this character.

The body, as will be observed, is constructed to carry four persons, and very much resembles the stanhope phaeton or T-cart. It has a spindled seat in front and a rumble in rear. The



Draft of Hungarian Racing Carriage.
Scale, ¾ in. to the foot.
Described on this page.

vehicle complete weighs about 460 pounds. Suspension is on four elliptic springs. In the Fashion Plate section preceding, we publish a picture of a Hungarian racing outfit as it appeared on one of the local race tracks. The builder of this unique rig is Henry Riesz, of Debreczen, Hungary.

The body is 11¼ in. deep and 6 ft. long; width at top, 34 in; at bottom, 32 in. Front seat, is 40 in. wide at top, 36 in. at top of body, 11 in. high and 22 in. deep. Front wheels are 35 in. and rear wheels 41 in. in diameter; hubs 3⅝ in. in diameter and 6⅛ in. long; spokes are ⅞ in.; rims are 1 5-16 in. deep; tires are 1¼ in. by ¼ in steel; axles, 1⅛ in. Springs are, center to center, front 36 in., rear 40 in.; width of steel, 1 3-16 in.; number of plates, five. Axles, 1⅛ in, full collinge. Track front and rear, 3 ft. 7 in.

Digitized by Google

TO TOUGHEN IRON FOR SPLITTING.

One of our valued patrons says: "If you happen to run short of Norway iron and have got to have a substitute, what would you do?

"G. B., ———, Iowa."

The question as put is by no means a new one. There is no specific compound or chemical agent by which the desired results may be obtained readily. The most reliable, simple and economical method is by piling and welding, as shown by Figs. 1, 2 and 3. Let Fig. 1 represent a piece of iron, say 6 in. long by 2 in. wide and ⅜ in. thick. Cut three pieces of similar iron in 2 in. lengths and lay them on Fig. 1 transversely, as per Fig. 2, A B C representing the three pieces. You now cross the grain and prevent longitudinal splitting. Next cut, from same iron, three pieces diagonally and place them on top of the pieces

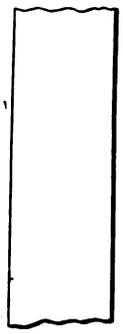


Fig. 1

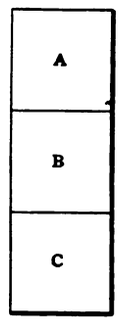


Fig. 2

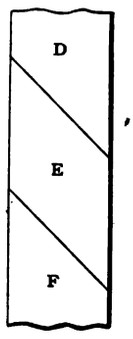


Fig. 3

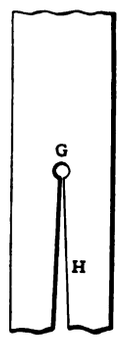


Fig. 4

A B C placed on Fig. 1 so as to lay on them as per D E F, Fig. 3. This shuts off transverse checks. On top of this place a plain piece, same as Fig. 1, raise a good mellow heat and weld thoroughly and you have a very desirable piece of iron. To guard against splitting or turning off, punch a round hole, as per G, Fig. 4, then split as per H. Results derived will be nearly the same as if Norway iron was used.

PROPOSE TO ESTABLISH A CO-OPERATIVE FACTORY AND REPAIR SHOP.

Plans are being matured by the Carriage and Wagon Workers' Union of Washington, D. C., for the establishment in that city of a co-operative factory and repair shop. It is proposed to erect a big plant in the downtown district for the manufacture, finishing and repairing of vehicles of all kinds, that will enter into active competition with the established firms.

A house to house canvass will be made of the big business firms and persons using traps and autos for business and pleasure, with a view to obtaining their patronage on a one-profit plan.

All profit that goes to the house or firm will be eliminated, except a small percentage. This will greatly cut the rate, not only on new work, but on repair work, the charge being merely for the time it takes a man or a given number of men to do the work. This wage will be the union scale, and an eight-hour day will, of course, be one of the features of the shop.

This plan will not be launched, however, if a satisfactory settlement is made with the local bosses following the recent two years' strike. The strike, according to the officers of the Carriage and Wagon Workers' Union, has practically been settled, all the men are back to work, and the union's demands have in practically every instance been met, but it is desired to have an agreement with the Manufacturers' Association to settle entirely the strike conditions and to avoid trouble in the future.

QUERIES FROM A SUBSCRIBER.

The following letter was recently received from one of The Hub's Pacific coast friends, asking information regarding matters which recently came to notice:

Editor of The Hub,

Dear Sir:—Would like to have your answer to the following queries, and if you deem them of sufficient interest would like to see them answered in the columns of The Hub.

First: Having the same axle with the same set, and the distance across top of wheels 2 in. greater than track of wheels, will the wheels, if dished ½ in. more by set of tire, increase the distance across top more than 1 in. over present width; same axle used in both cases.

Second: Enclosed is sample of Buick roadster. Can you tell me how such a fine surface is obtained with such a thin shell of paint? How do they build up such a surface? How many coats do they put on? How many of these coats are rubbed down and how do they rub them down? Can you tell me what combination of colors are used to obtain this shade?

Finally, another old question: All smiths know that a short-coupled wagon—one where the wheels, hind and front, are as close as possible for the length of the body—runs easier than a long-coupled body and in building a wagon we always endeavor to do this. Now, I would like to know the theory as to why a short-coupled wagons runs easier than a long-coupled wagon.

Hoping the above questions are of sufficient importance to warrant your early reply, I am,

Yours respectfully,

HERMAN WERTSCH.

San Francisco, March 23, 1908.

Reply to first question: If the wheels are dished ½ in. more the track and the distance across top of wheels will be increased 1 in. more than at present—nothing more or less—if the axles retain same set.

To second question: The finish on the sample of panel sent us is undoubtedly produced by the employment of one or two coats of baking enamel used over a white base, which, from the fact that the white pigment is much softer than the outside enamel coat, has evidently been applied in the form of a regular filler or paint coat. Examination of this sample under a strong glass reveals a network of fine checks characteristic of enamels when their power for service has begun to decline, but not to the extent of prohibiting them from offering long continued periods of usefulness.

It is said to be possible at the present time to use baking enamels, and especially those of a light color like the sample submitted, and produce a remarkably hard and smooth finish in an oven or retort heated at a much lower temperature than was possible formerly—at a temperature, in point of fact, in no wise injurious to glued joints and other parts of the surface.

The special gray automobile color displayed by the sample is produced by casting refined lampblack upon a white base and adding an atom of Prussian blue to give it the desired cool effect.

The proportions of the ingredients made use of will depend upon the strength of the pigments, different makes varying greatly in coloring capacity.

A request directed to the manufacturers of the vehicle mentioned by our correspondent would doubtless result in an answer covering in detail the process of developing the finish in question.

To third question: Regarding this query opinions differ. Although we have made no personal tests to warrant us in giving a positive verdict, yet we must accept the judgment of engineers who have made such tests. Their conclusions are that the draft of a long-coupled vehicle is as easy as one coupled short.

Digitized by Google

PAINTING AND UPHOLSTERING

ROUGHSTUFF CONSISTENCY IN RELATION TO TO THE FINISHED SURFACE.

At various exhibitions of carriages and automobiles which have occurred during the past year a good many, to us, well grounded complaints have been circulated concerning the apparent coarseness of the finish. The surfaces seemed to carry a strong flow of varnish and there has been a certain depth and richness of effect, despite the fact that the coarseness has manifested itself unmistakably. Close examination of some of these surfaces leads to the conclusion that the trouble had its origin, not in the color coats nor in the coats of varnish, but back in those remote processes connected with the application of the roughstuff.

There is such a thing—although vehicle painters as a class have been slow to recognize it—as abusing even such a plebeian pigment as roughstuff, and it is this failure to draw the line sharply between just enough and an indefinite sufficiency, that has become responsible for the use of the roughstuff with the excessively heavy body which in turn has resulted in the coarse surfaces alluded to. In many of the best New York, Philadelphia and Boston shops it is now the practice to use thinner coats of material and more of them in bringing up the foundation of roughstuff, thus getting surfaces conspicuously free from the coarse, "welty" appearance. Roughstuff should go to the surface and flat out perfectly smooth and free from brush marks. It is then fulfilling its mission.

THE CHAMOIS SKIN AND SPONGE SUPPLY.

The vehicle painter is not handling any more real simon-pure chamois skins, and the word "chamois" simply applies to the method of tanning sheep and goat skins. The long used and attractive title is therefore something of a misnomer. Authorities aver that a good many less than two thousand chamois have been shot during the past ten years, which makes it practically self-evident that our present day chamois skins were formerly worn by placid wool producers and tin can eaters. The wise carriage painters of the mother-land do not refer to chamois skins any more. They speak plainly and call the substitutes "wash leathers."

Some one has recently advised through the trade papers that oil finished skins are, generally speaking, better suited to the vehicle painter's needs than those finished in lime. The oil finished skins are said to cost fully one-quarter more than the lime finished ones, but the average life of the oil finished one is said to be double that of the lime finished article.

However, it is in order here to state that not all oil finished skins come from London, which is said to be the center of the trade in the best grade of skins. We have personally used so-called oil finished skins which were about as undesirable as could be, being far inferior to the lime finished skins. For water-drying-up purposes the latter will not infrequently surpass the former. A strictly good skin should be compact, close knit in its fiber, tough, yet withal soft and pliable, and with a great capacity for absorbing water and drying off surfaces.

As to care taking, the skins should be kept, when not in use, in a clean, dust-proof compartment. Before laying away after use they should be washed out in soft, soapy water, rinsed in clean water, wrung dry, and stretched out to normal expansion, thus insuring a shapely and flexible skin for future use.

Sponges.

In the matter of sponges the sheep's wool variety is to be preferred, and for which the painter can well afford a good stiff advance in price over the just ordinary sponges, or the seductively named velvet sponges, some varieties of the latter being particularly unsatisfactory.

The sheep's wool sponge runs, as a rule, soft in texture, tough in composition, of large water-carrying capacity and exceedingly durable. Sizes which run about fifteen pieces to the pound are the most available, all things considered, for carriage, wagon and automobile work. Sponges with hard, coarse exteriors, and flimsy, brittle interiors and centers are really unfit for vehicle work, and are, moreover, the most expensive for any purpose that one can buy.

Notwithstanding the fact that some dealers advise that the sponge supply need not necessarily be stored in cleanly quarters, as dust does them no injury, we are moved to exhort otherwise. Sponges, in order to keep them in a sufficiently moist condition, should be stored in a slightly damp section of the premises, and in a receptacle absolutely clean and capable of being maintained clean. Even if the life of the sponge is not prolonged through circumspectly clean care taking, this same cleanliness is conducive to a better grade of results during the active use of the marine substance.

PUTTY APPLIED IN MINIMUM QUANTITY MOST DESIRABLE.

No less an authority than "Dan" Wheeler, master painter at Studebaker's New York establishment, is on record as saying of putty that "the least of it used the better." Speaking thus Mr. Wheeler had in mind the puttying of a surface from which the old paint was burned. Carriage painters, and especially those engaged in the repainting business, are for the most part, we feel assured, prepared to heartily agree with Mr. Wheeler's conclusions. Observations, and the subsequent data obtained, will show that putty is purely and simply an emergency pigment expected to make good, temporarily at least, a greater or less number of surface deficiencies. We use the word temporarily advisedly because it is the uncertainty which attaches to the application of putty to the surface that renders its position there of a temporary character. Not that the putty may actually be dislodged from its niche upon the surface, but rather that its position and shape may be changed sufficiently under the wear and stress of service to give it only a temporary face of an exact match with the surface upon which it is employed. And it is this change of form, more or less frequent, which causes the average painter to distrust the plastic material, and to cry out in unison with the wizard of the famous Studebaker establishment, "the less of it the better."

That the time is far distant when putty may be dispensed with in the bringing up of paint surfaces will be admitted. That its employment, however, is to be more and more restricted and reduced to the minimum appears equally probable, and unquestionably to the betterment of the wearing capacity of the finished surface. One important method of accomplishing the diminished employment of putty upon all burned-off surfaces, at any rate, is to enforce increased care and efficiency in handling the burning torch or lamp, and also in using the knife or other utensil in removing the softened pigment. A surface—that is to say, a surface with its wood fiber in good condition—may be burned off so well, and the wood left in such an intact and normal condition, as to require scarcely any putty. We are speaking now of running parts, which, being of hard wood, are not easily fractured or gouged. Plenty of places upon the surface which under a casual glance may seem to stand in need of puttying are only in need of some thorough sandpapering and other

Digitized by Google

attendant surfacing processes to fit them perfectly for the necessary coatings.

It is really wonderful to what extent putty may be dispensed with when expert and thorough surfacing processes are enforced. And, come to think of it, how much more confidently the painter can recommend the wearing possibilities of a surface when the vagaries and uncertainties of putty are not neccessarily to be accounted for.

In the bringing up of carriage body surfaces we must, of course, reckon more surely with the vagabond nature of putty. There are depressions, and inequalities, and cavities, which, despite the leveling up and filling up properties of roughstuff, must be shaped up with putty. But even here there is an opportunity for limiting the quantity of putty used to the minimum extent. The practice of smearing on putty prolifically, assuming that under the leveling processes of rubbing the roughstuff all surplus pigment will be removed is unqualifiedly bad and inexcusable. The only place that putty has upon the paint surface is where no other pigment, in the ordinary course of surfacing processes, may be used and made to accomplish the desired results. Moderation in the use of putty means, in a word, finished surfaces of greater permanence.

FUNDAMENTAL ESSENTIALS CONNECTED WITH THE USE OF VARNISH.

It is more than likely if a canvass were made among experienced varnishers with a view of ascertaining the chief essential to success in the varnish room that at least nine out of every ten replies would insist that the best varnish, regardless of price, is the main essential. This contention, too, in face of the fact that a great number of buyers are directly influenced by the price rather than by the name of the maker or the reputation of the material as a trustworthy and high-class article. In a felicitous talk upon varnish delivered some years ago by a widely known varnish maker the statement was made, and remains unto this day unchallenged, that "the best is cheapest in the end." The practical user of varnish, uninfluenced by the chatter of the salesman who would sell the "just-as-good varnish at a less price," and who also elects to put prejudice aside when making choice of the varnish supply, knows beyond peradventure that the varnish with the quality of a thoroughbred in its makeup, and with the virtue of reliability sticking to it "closer than a brother," is the chief essential—the fundamental essential, indeed—to what we may be permitted to call successful varnish using.

We invoke the dawn of the millenium in the matter of varnish-room results, but like the children of another age stubbornly refuse to "break up the fallow ground" that means larger returns when the books are balanced at the end of the year. When the time comes, as it must come, that varnish consumers buy according to the dictates of their experience and unbiased judgment, and without a particle of reference to the price other than to know that it is based upon the quality of the commodity, we may expect to hear comparatively little of varnish-room failures and far fewer cases of premature varnish collapse on the highways.

Another essential—a fundamental one, if you are pleased to call it that—is abstinence from using different brands of varnish upon the same job—upon the same surface, to be explicit. Many a painter has gone down to defeat, wondering how it all happened, through the practice of using simultaneously the products of several makers of varnish. Some men invite defeat insistently and deliberately, and escape the whirlwind for a sufficient length of time to justify their friends in crediting them as wise master builders; but the day of reckoning is not always to be mocked, and the hour of judgment inevitably strikes. The more or less miscellaneous use of different varnishes, or the mixing of different makes, or of different brands of the same make, is fraught with more danger than any vehicle painter of the present time can afford to face. The time has gone by, if in fact it ever existed, when a skilled workman could obtain good results with any material irrespective of quality, brand or mixture.

The use of a single varnish upon any given job should be a living rule of practice with all varnishers. Likewise, in the law book of the paint shop should be that other proverb, "Mix not your varnishes lest evil overtake you in the way."

Some painters, and naturally, some varnishers, just simply delight in taking chances. To them the essential of an excellent apartment to work in, to varnish in, and to dry varnish in, is secondary to other things having in reality little to do with the development of varnish in a way to enhance its beauty and usefulness.

Plenty of ventilation, dry air, and warmed to a uniformly maintained temperature of from 65 to 70 degrees, are essentials of no mean value. Ventilation of the right sort, which means, in other words, access to a good quantity of practically pure air, is of supreme importance in the varnish room. Then to have that air heated properly, and such heat maintained with the minimum fluctuations, comprises, virtually, the third degree of essentials. Related to the above essentials is another not the least in importance, namely, light. The necessity of light in the varnish room both at the time of varnishing and in those later critical hours of the life of varnish upon the surface, is, we might say, a household word in homes represented by the unterrified brush wielders. French chemists were first among authorities to give weight to the dictum that light is the chief drying agent of varnish, and not merely a drying agent, but equally important, an active agent in the development of brilliancy and depth of lustre of varnish.

And then to all these essentials add the following: Clean brushes, clean workmen, clean varnishing quarters, full, rich, bountiful coats of varnish, surfaces of reasonable depth and security, and finally, varnishers who are in very truth artists primarius. So readeth the fundamental essentials connected with the use of varnish.

TRANSFER DECORATIONS.

With competition as keen as it is to-day, vehicle builders are not only obliged to get right down to first principles, but have to take into consideration every department of construction, trimming all superfluous exense and producing the job on a rock bottom basis. In this operation no department can show a greater saving than the painting, and especially so where the work calls for ornamental effects. Palm, Fechteler & Co., of 67 Fifth Ave., New York, the world's greatest house for transfer decorations, have been instrumental in putting many vehicle builders on the right road. They have carefully considered the requirements of vehicle builders and have a line of scrolls, figures, flowers, letters, animals, numerals, corners and stripings that are especially prepared for vehicle builders and those who are not familiar with the product of this progressive house should hasten to know all about the line. The beauty of transfer decorations is that uniform results are always possible, and what is more, an immense saving in time and money.

Have you a name plate transfer? Better get a sample of this class of work when writing.

DECORATION OF METAL, WOOD AND GLASS.

A book for manufacturers, mechanics, painters, decorators and all workmen in fancy trades has recently been issued by John Wiley & Sons, 43 East Nineteenth St., New York. This book is 12 mo. and contains 228 pages, and treats on methods of bronzing ornaments, etc., dyeing or staining marble, ivory or bone; colored enamels for metals; gilding and silvering on wood; decoration of porcelain; etching of various materials, and decorating of metals by oxidizing.

It also contains formulae for lacquering metals and fixing drawings on linen and glass, and for waterproofing crayon and charcoal drawings, maps, prints, etc. The book sells for $2.

Digitized by Google

DESIGN OF TRIMMING FOR TANDEM CART.

Illustrations accompanying.

Two-wheelers with a keen edge in their style, and that are set well up in their designs, require to be correspondingly upholstered. In vehicles of such narrow compass there is not much room for the display of elaborate work in the trimming. But it is in this very contracted area where the talent of the trimmer shows itself to such advantage, and where his work adds to the superior finish of the carriage.

Because it is in fashioning the materials into living effect where true art shows itself. Labor cements connections by its excellence of execution only, but art lives—when time and decay

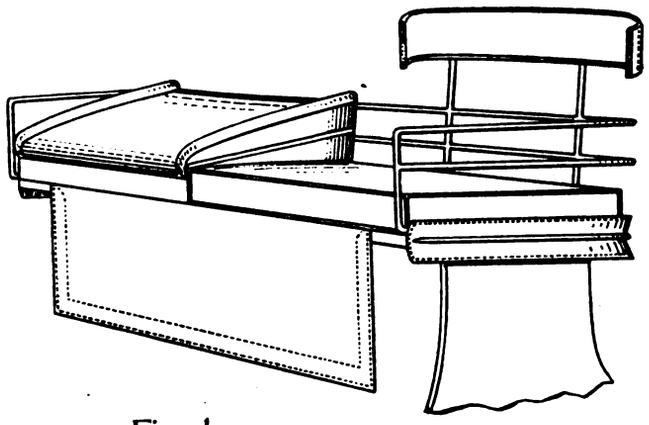


Fig. 1

have set their relentless hands upon the material and the labor of the handicraftsman.

Fig. 1 is drawn in perspective and shows the front driving seat of a high-class two-wheeled cart, such as is shown in the working draft in this number, and the style in which the cushions are made. The driving side is fitted with box and driving cushion as is generaly furnished in upholstering this class of work, while the lady's side is cushioned only. The seat fall is made in plain paneling, and the edge can either be finished with moulding or

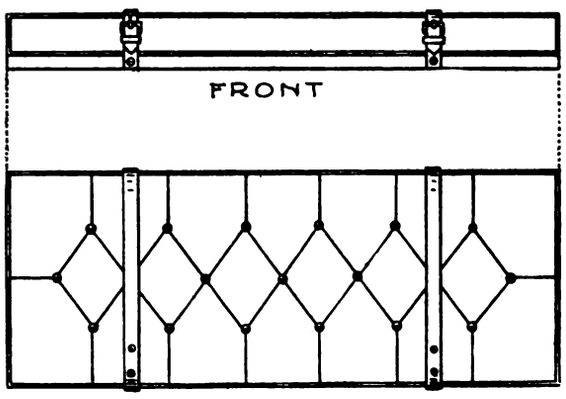


Fig. 2

in 1½ in. lace, which may be figured or plain. The latter is much preferable for this class of outside trimming.

The back rest is made to fit one side only, though it is quite as frequently carried whole length of the seat.

The cushions are held to position with diagonal strapping, which looks smarter and holds the cushions firmer than single straps.

The valance is made of heavy border leather and welted on top and bottom edges. A nicely balanced width of valance, together with its smart finish, has a very telling effect in a seat's trimming. Its depth and proportionate effect to the design of the body all tell in the finishing of the upholstery. The dash should be very smartly covered, and the stitching of the best, while the outer side rails should be covered with enamel leather, and so ought the seat rails in first-class work.

The back rest is made of rail iron and forged into the seat rail. It is covered in the rails with enamel leather, while the paneling is of patent leather. The covering and the cloth material are stitched together with welting leather around the edges.

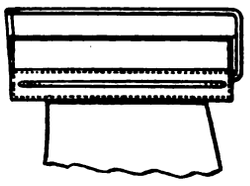


Fig. 3

fixed with cross straps only. Some builders have their cushions made with tabs fixed to the bottoms and hitch on to small knobs driven into the seat framing for the purpose, but this is not at all a good plan, because holes are ultimately worn through the cushion bottoms by these protuberances. The seat rails in rear are also covered with light enamel leather, and the sides of the seat finished with valances, but of course is not so deep as those on the front seat.

In stuffing the cushions the very best hair should be used. The hind cushion, Fig. 2, is made full length of seat, and This quality always keeps the cushions to a fullness of surface. Cushions become compressed and matted together with continued heavy usage. There is a great art in stuffing cushions to a deep fullness, without making a hardness, so that the hair may act as a mass of tiny coil springs in resisting the pressure brought on them, but this can only be accomplished through proper packing of hair, which should be of the very best quality.



Fig. 4

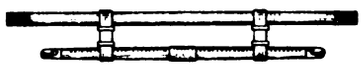


Fig. 5

The quality of hair is best tested by gripping it in the hand and feeling its resilience.

The door chains should be covered with enamel leather, but in this work many high-class builders use quadrant irons to hold the door in position. Fig. 3 shows the side section of the hind seat, cushion, side rail and valance. Fig. 4 shows the draught bar and its hanging to the cross bar of shaft. The loose draught bar is hung with the best oil leather strappings and finished with creasings on each side. The top and bottom loops are also of oil leather. The straps should not be less than 4½ or 5 in. long over bars, to allow the draught bar clearance room to rise to the pull of the chains. The straps should be long enough to let the chains take the pull, so that there is no stress whatever on the straps other than the weight of the draught bar, as it hangs in position on the draw-bar of the carriage.

Fig. 5 shows the shaft and the positions for the kicking and breeching leathers. These are in the great majority of cases placed at wrong distances to suit the harness and purchasing power of the horse. A kicking strap should lay at an angle on the horse's flanks, so that if he kicks the strap is in a position to exert a quick and holding check upon him. This leather should center 10 in. from the draw-bar. The breeching leathers are fixed at their centers 32 in. from the draw-bar. This distance allows the horse to use his power fully in backing or in holding the cart back on descending a hill, and at a proper angle to the position and weight of his body, and in harmony with the harness.

The tug straps should be placed not less than 19 in. from the point of the shaft tip to suit a horse 16 hands high.

Digitized by Google

CARE OF FINE CARRIAGES.

In a former chapter entitled "Care of Fine Carriages" we confined such treatment in relating how badly many carriage users treat their fine vehicles. In the present chapter we illustrate and tell how the work may be properly done.

If we drive in with the vehicle bespattered with mud, and much of it hard or frozen, the squirting of water through a hose at any pressure is to be avoided. If it is an open-top vehicle remove all the loose furniture, curtains, cushions, mats, etc.; also remove the side curtains and let down and secure the back curtain. Let the top half down and with lukewarm water and a sponge soak the mud loose from the leather. Have another pail of clean lukewarm water and a clean sponge with which to finish

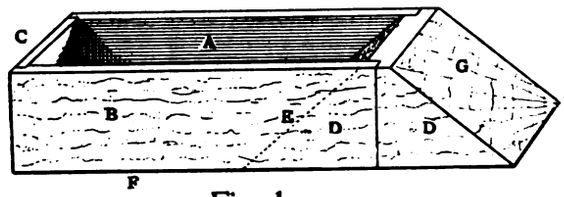


Fig. 1

the front. Proceed with the back part and back curtain in the same manner, after which use the chamois until top is dry.

Now begin with body and seat in the same manner, with this difference: three waters are necessary and with the last one the chamois may be rinsed as often as necessary. With the second water proceed carefully to cleanse the inside of body and seat, finishing with the third water. Before beginning be sure that drip holes in bottom are open and clear to permit of the water running out and off, after which dry out with a semi-wet soft sponge, and with an old sponge clean off the outer or under bottom. In a few minutes the body will be dry enough to begin on the gear.

In washing the gear, more especially in winter, leave out the hose, that is, after body is done. Here is where a novel appliance and aid comes to the relief of the practical caretaker. Fig. 1

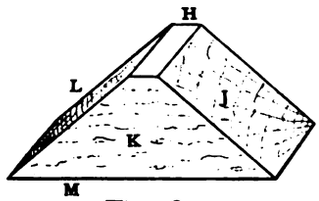


Fig. 2

represents a water box, as follows: A, the open top; B, side; C, end; D D, a block inclined or beveled on each end—further explained in Fig. 2. Dotted line E shows incline inside of box; F, bottom; G, face of outer incline.

Fig. 2 shows the block before it is applied and secured to the box proper; H, top of same; J, the outer end of block; K, side of block to which sides of box are secured; L, inner end of block; M, bottom of same and the part to which the bottom is secured. Two of these would be better than one; one, however, is better than none. Make the boxes of about 1 in. stuff, about 3 ft. long, 10 in. deep inside, and about 10 in wide.

When done with the body, top, etc., fill the boxes about three-quarters full of water of the proper temperature. Next place them in such a position that the vehicle may be drawn ahead enough to allow either the two front or two hind wheels to enter the troughs or boxes, and raise one at a time with jacks. Turn the wheels slowly so as to allow the mud to soak loose, and avoid splashing the body. When thoroughly soaked use the sponges, first one, then the other, until the mud is dislodged. Then place the other two wheels in boxes and treat the same, after which empty and rinse the boxes and place in them clean water for finishing. Two waters are usually quite enough. After the wheels are done the gear may be attended to by using a pail. A careful caretaker will have separate sponges and chamois for bodies and gear.

When the cleansing is over the oiling and washering of the axles may be attended to. The thorough caretakes will always have at hand, in a tin can, the following mixture: Four parts neats-foot oil, one part raw linseed oil, one part beeswax, just enough lampblack to cover, mix by warming—with which he will go over the top, when dry, using for the purpose a sponge, and afterwards rubbing well with a piece of woolen cloth. Such treatment of the top lends to its life, keeps the leather soft, and continues it waterproof. For the dash rub over with a little cottonseed oil and polish with woolen cloth.

BIG WAGON CONCERN FORMED.

One of the strongest enterprises incorporated in Kentcucky in some time is the Mogul Wagon Company, of Hopkinsville, the charter for which was filed on March 13th. The capital stock is placed at $250,000, and of this $75,000 is preferred stock and $175,000 is common stock. This stock is divided into shares of $50 each. The corporation is formed for fifty years, unless sooner dissolved.

Twenty of the most substantial and progressive business men of the town, representing all lines of trade, are the incorporators.

The corporation will take over the immense wagon manufacturing plant which was recently completed by the Forbes Manufacturing Company, and it will be run entirely separate from that business. In addition to manufacturing the Mogul wagon, the company will operate a saw mill, hub and spoke factory and maintain lumber sheds. The plant will have an annual capacity of 12,000 wagons, and is one of the largest and most complete in the country.

MARKET FOR STEEL WAGONS AND WHEELS.

An American consular officer in South Africa reports that there is a large sale of steel wagons and wheels in that territory, and American goods of this class should find a ready market if properly introduced. The consular officer in questoin has forwarded a number of photographs showing the types of wagons at present in use in that region, which may be obtained from the Bureau of Manufactures by interested manufacturers, together with the names of merchants to whom correspondence may be addressed regarding this subject.

HORSE AGAINST AUTOMOBILE.

The automobile fad has not in the slightest manner interfered with interest in the good horse, and while many horse lovers also keep an automobile or two, the latter has been the vehicle for business purposes, for taking the ladies on their shopping and calling tours, but the original love for the horse has never waned, says American Sportsman. In fact, his intelligence, faithfulness and many other good qualities have only made him all the more appreciated by comparison with his mechanical, inanimate stablemate. You can't feed an automobile sugar, you can't pat and stroke its neck and feel the soft caresses of its velvety muzzle on your cheek. You can't talk to it as you ride along and feel the magnetic response that comes through the reins and the whinney and neigh and pricking up of the ears, all of which tell you that he knows and understands what you say. You cannot let it jog along on a loose rein, knowing that it has intelligence and reasoning powers, that it will turn in and out of its own accord. To take your hand away from the steering wheel for a moment to allow your gaze to wander to the surrounding landscape, and to enjoy the beauties of the scenery, is apt to land you in the hospital and your machine on the scrap heap. Nature is nature, and while the auto is a mechanical device that has its uses and fills certain wants, as compared with an intelligent, well-bred horse, it imitates nature about as closely as does an artificial flower a rose in full bloom, with its beautiful tints and sweet perfumes.

Digitized by Google

General Topics of Interest to Trade

PHILADELPHIA CARRIAGE AND WAGON ASSOCIATION ELECTS OFFICERS.

The Carriage and Wagon Builders' Association of Philadelphia held their regular monthly and thirteenth annual meeting on the evening of March 20th, at the Philadelphia Bourse. The election of officers which took place at that meeting resulted as follows: President, George Waldman; vice-presidents, W. E. Marbaker, Charles W. Priesendanz, LeRoy C. Kendall; secretary, Henry F. Keachline; treasurer, Frank Schanz; Executive Committeeman for three years, W. E. Marbaker. Discussions on trade subjects which followed were interesting.

TWO NEW SOUTHERN FIRMS TO BUILD AND SELL CARRIAGES.

C. E. Wright & Co., recently incorporated at Norfolk, Va., with a capital of $50,000, to manufacture and deal in carriages, implements, automobiles, etc., opened their new place of business in the Dixie building on April 1st. The officers of the company are: C. E. Wright, president; H. A. Bracie, vice-president; J. H. Wright, secretary and treasurer.

The Bristow-Worsham Company, Richmond, Va., has been incorporated with a maximum capital of $15,000 and minimum of $8,000, to manufacture and sell vehicles. B. C. Bristow is president; R. A. Carter, vice-president, Manchester, Va.; C. E. Worsham, secretary and treasurer, Richmond; H. W. Goodwin, Manchester, Va.

CELEBRATED IN HONOR OF COMPLETION OF NEW FACTORY.

In celebration of the completion of the Diamond Rubber Company's mammoth new factory building at Akron, Ohio, which is intended to house the insulated wire and Marsh rim departments, a grand ball was held recently, under the auspices of the Diamond Rubber Workers' Relief Association and the Diamond Rubber Band. The estimated attendance was 2,500. The floor upon which the guests danced is 320 feet in length and 100 feet wide. Speeches were made by several of Akron's prominent men and a special musical program given. A buffet lunch was served in conclusion.

DURANT-DORT CO. TO ERECT A MALLEABLE IRON PLANT.

R. C. Durant, of the Durant-Dort Company, Flint, Mich., was in Riverside, Cal., recently looking into the details of the proposition of purchasing land for a malleable iron factory. Mr. Durant said that in all probability the details would be arranged by his company within a few days and the new shops would be ready for business some time next fall.

SWEET TIRE AND RUBBER COMPANY.

The Sweet Tire and Rubber Company, of Batavia, N. Y., are now making, besides their regular output of automobile tires and inner tubes, a general line of mechanical rubber goods and mold work. They are making wrapped tread tires, called the "Batavia Clincher," and also a bevel-edged tire protector.

ARRANGEMENTS OF INTERNATIONAL HORSE SHOW.

The International Horse Show to be held in London will continue for nine days, commencing on the evening of Thursday, June 18th, and continuing each afternoon and evening until its close on Saturday, June 27th. The directors announce the possibility of judging some of the classes in the mornings should extremely large entries warrant such a course. The days to be devoted to the Horse Show are free from other attractions, so that the attention of thousands throughout the country will be centered on the doings at Olympia.

The prizes amount to about $50,000, and it has been announced that a sum approaching $150,000 is to be spent on the organization of the exhibition. All the stabling is, on this occasion, to be decorated, and the arrangements outlined in the schedule for the comfort of intending exhibitors, grooms, horses, etc., are most complete. Entries close on May 20th.

APPLICATION FOR CHANGE IN SPECIFICATIONS ON VEHICLES.

The following application, sent conjointly by the Carriage Builders' National Association and the Cincinnati Carriage Makers' Club, through their respective committees on Freight and Classification, to the chairman of the Official Classification Committee, C. E. Gill, and that gentleman's reply, follow:

Cincinnati, Ohio, March 20, 1908.

Mr. C. E. Gill, Chairman,
Official Classification Committee,
New York City.

Dear Sir:—The undersigned associations of vehicle manufacturers beg to request that at the April meeting of your committee the classification of vehicles N. O. S., page 157, item 3, be so amended that wherever reference to 94 in. in length is made, that same be eliminated also that wherever 50 in. in height is referred to, that it be made to read 54 in.

In response to the application filed with your committee in September, 1907, by a number of associations, you increased the permitted height of packages from 30 in. to 34 in. The same reasons exist for increasing the height from 50 in. to 54 in. While 52 in. would in some cases be sufficient to properly protect the tops of vehicles, for many styles it is not. In most cases 50 in. is sufficient, in others 52½, 53 or 54 in. are required. By permitting the manufacturer the use of enough space to properly protect the top of a vehicle without any penalty as to rate, the railroads will be relieved from the greater part of claims incident to damage to vehicles in less than carloads while in transit or in depots. The additional space occupied in a car by the few vehicles necessarily crated over 50 in. will not be of serious moment to the railroads.

With reference to the elimination of the question of 94 in. in length, we desire to state that the greater the length, the greater the weight per cubic foot, and it is unfair that because a package necessarily exceeds 94 in., there should be assessed any higher rate for that reason. The Southern and Western Classifications recognize this principle and properly make no restriction as to length.

It is improper that an express wagon, which is necessarily crated over 94 in., the value of which is but $60.00, should be assessed D-1, while a surrey which can be crated under 94 in., and the value of which may be from $150 to $200, should be assessed 1-¼.

For your information, below find a statement, showing bug-

Digitized by Google

gies, surreys and wagons in crates of different heights and lengths, the weights thereof, the number of cubic feet occupied, the weight per cubic feet, and the class rate applicable:

Buggy	30 x 71 in.	450	73	6.16	1-¼
"	50 x 68 in.	525	118	4.36	D-1
Surrey	30 x 94 in.	845	98	8.62	1-¼
"	30 x 100 in.	940	104	9.04	D-1
"	50 x 94 in.	820	163	5.03	D-1
"	52 x 94 in.	850	170	5.00	3-1
"	50 x 100 in.	930	171	5.44	2-½
Wagon	25 x 89 in.	500	77	6.50	1-¼
"	25 x 94 in.	725	82	8.84	1-¼
"	26 x 107 in.	730	97	7.52	2-1
"	27 x 94 in.	750	88	8.52	1-¼
"	27 x 106 in.	800	100	8.00	2-1
"	27 x 111 in.	950	104	9.13	2-1
"	30 x 107 in.	805	111	7.25	2-1
"	30 x 122 in.	810	127	6.37	2-1
"	42 x 111 in.	1,080	162	6.66	2-½

It seems improper that a wagon crated 27 by 111 in., which weighs 9.13 pounds per cubic foot, should be assessed D-1, while a wagon 25 by 89 in., which weighs but 6.50 pounds per cubic foot, should be assessed 1-¼, or that a surrey which is crated 30 by 100 in., and weighs 9.04 pounds per cubic foot, should be assessed D-1, while an entirely similar job which can be crated 30 by 94 in. and weighs 8.62 pounds per cubic foot, should be assessed 1-¼. Again, it is apparently wrong that a surrey crated under 50 by 94 in. and weighing 5.03 pounds per cubic foot, should pay D-1, while one 2 in. higher and weighing 5 pounds per cubic foot should be assessed 3-1, or 50 per cent. more for two inches in height.

We also request favorable action on that part of the petition of September 11, 1907, above referred to, in which it is asked that express tops for wagons, when knocked down and crated under 12 in., and shipped with the vehicles to which they belong, be handled at the same rate per hundred as the vehicle itself.

The manufacturer will keep his crates as low and short as is consistent with the reasonable safety of the vehicle in transit, if for no other reason than to economize in the cost of lumber.

Very respectfully,

CARRIAGE BUILDERS' NATIONAL ASS'N,
Per Theo. Luth,
Chairman Committee on Freight and Classification.

CINCINNATI CARRIAGE MAKERS' CLUB,
Per A. G. Brunsman,
Chairman Committee on Freight and Classification.

143 Liberty St., New York, March 23, 1908.

Mr. Theo. Luth, Chairman,
Committee on Freight and Classification,
C. B. N. A., Cincinnati, Ohio.

Dear Sir: I beg to acknowledge receipt of your favor of March 20th, contents of which have been carefully noted.

The subject referred to has been listed for consideration of our committee at the ensuing April meeting, and you will be thereafter informed of the result. Yours truly,

C. E. GILL,
Chairman Official Classification Committee.

FAVORABLE REPORT FROM AMESBURY.

Carriage making has long made Amesbury famous, and for the first time since the depression set in last fall the shipments of vehicles there have come to resemble something like old times, says the Springfield (Mass.) Republican. Considerable shipments were made during the last week of March, representing a number of factories, and showing that all are doing something. While business is nothing like as good as it was a year ago, all of the manufacturers report that an improvement is to be seen. Business in Amesbury is on the gain, but it is admitted that there are still many men idle for want of work.

PITTSBURG CARRIAGE BUILDER SUING FOR DAMAGES.

A suit for the recovery of $30,000 damages has been filed against the Standard Automobile Company, of Pittsburg, Pa., by Joseph Glesenkamp, the well-known Pittsburg carriage manufacturer, and his wife. Mr. Glesenkamp also makes complaint on behalf of his minor son, all of whom, it is alleged, were seriously injured in an automobile accident due to the alleged carelessness of the defendant's chauffeur, who, it is claimed, was driving his car at a reckless speed at the time of the accident, and was also under the influence of liquor. The Glesenkamps were out driving at the time of the unfortunate collision.

HARDWOOD CONSUMERS HOLD IMPORTANT MEETING.

A meeting of those interested, in a business way, in the production, sale and consumption of vehicle wood material, embracing hickory in a large measure, as well as oak, ash and other hardwoods suitable for their purposes, was held in Cincinnati, Ohio, Tuesday, April 14th, at the Sinton Hotel, and was called under the auspices of the National Hickory Association and the American Vehicle Woodstock Association.

The object of this conference was to bring together for the first time in a number of years those interested in this important subject, involving the timber question in its bearing upon the vehicle trade. Representatives of the Forest Service were present to give the benefit of all information at their command, including the results of tests made by them as a consequence of the work of the National Hickory Association. Others were present, selected by reason of their experience, to give the benefit of their ideas and suggestions as to proper policies for the conduct of business under these conditions, and the program included those considered the best authorities in their lines.

A very large attendance was present by reason of the fact that various associations of manufacturers in the vehicle wood line have called their regular meetings at the same place for the day following this general meeting, with the understanding that the 14th is to be devoted to the work of this general meeting, and the following day was given over to individual meetings of their own various associations.

BROADENING ITS WORK FOR THE HORSE.

Boston's Work Horse Parade Association announces its sixth annual exhibition and competition for Memorial Day, May 30th. Supplementing its good work in improving the condition of equine laborers, the association has this year appointed a permanent agent or inspector whose duty it will be to visit stables where horses of the poorer classes are kept, and to advise, or, if other means fail, prosecute owners who neglect them. Needy but worthy owners are to be given, free of expense, such assistance as they require, including blankets, shoeing, and veterinary treatment for their horses. One of the directors of the association has offered to provide for shoeing twenty-five horses, and the responses from veterinary surgeons and stable keepers whose assistance has been asked have been prompt and generous.

NEW MANUFACTURING CONCERN.

The Carlisle Vehicle Apron and Hood Company, of Carlisle, Ky., is the name of the new concern that it is said will immediately begin the manufacture of the new storm hood and apron for buggies which was recently invented and patented by John J. Archdeacon, of that city, who is a member of the carriage manufacturing firm of James Archdeacon & Sons.

That gentleman and Willis M. Mathers are the proprietors of the new company. It is stated that they will also manufacture a line of rubber goods.

Digitized by Google

ELECTION OF OFFICERS OF CINCINNATI CARRIAGE MAKERS' CLUB TAKES PLACE.

The monthly and annual meeting of the Cincinnati Carriage Makers' Club was held at the Grand Hotel, that city, on Thursday evening, March 12th. Of the eighty-four present, seventy-eight were members of the club, five were guests, and one a representative of the press.

President Brown called the meeting to order, expressing his regrets at being absent from the February meeting, and his pleasure at being present on this occasion. The minutes of the February meeting were read and approved. The secretary read a copy of the letter sent to each one of the Hamilton County delegation at Columbus, in which the club called attention to the fact that they endorsed the bill before the Legislature, drawn by the Receivers' and Shippers' Association, relating to the trusteeship of the Cincinnati Southern Railway Company.

The following gentlemen became members of the club: Geo. E. Fisher, of the Fisher Carriage Co., Cincinnati, and Geo. L. Mitchell, with the Mitchell-Mallon Co., varnish makers of New York City. The transfer of the membership of W. J. Purser, of the Higgin Mfg. Co., was made to J. R. Froome, of same company, and of Elisha Morgan, of the Chicago Varnish Co. to O. A. Timberlake, of the same company. The resignation of Will Smith was accepted, and that of Jacob Haberer, Jr., was referred to a committee to see him and secure withdrawal of his resignation.

Theodore Luth introduced a resolution, which after much discussion was modified and adopted. The resolution stipulated that it is the sense of the Carriage Makers' Club that the railroad lines reaching Cincinnati from the south should adopt the car service rules of the Ohio Railroad Commission, and extend the limits to which Cincinnati rates should apply, and adopt a reciprocal switching basis with the lines north of the Ohio River, whereby they will absorb switching charges on local as well as on competitive traffic, subject to a normal minimum revenue.

Another resolution of Mr. Luth's adopted by the club was that it is in smpathy with any legislation permitting the Louisville & Nashville Railroad to cross the public landing with its elevated structure, provided that the plans be so modified as not to interfere with river traffic, and that the L. & N. R. R. agrees to adopt the car service rules of the Railroad Commission of Ohio on its tracks within the city of Cincinnati, and that the L. & N. R. R. agrees to extend its switching limits and adjust its switching charges in the vicinity of Cincinnati on a reciprocal basis with northern roads as outlined in previous resolution.

The election of the Board of Governors also took place. There were sixteen names on the ticket, of which eight were elected by receiving the highest number of votes, four for two years, and four for one year. Those elected for two years are Otto Armleder, M. J. McNamara, R. D. Nibert and C. F. Pratt. Those elected for one year are A. S. Brown, W. J. Brunsman, H. S. Cox and C. L. Stephens. At the April meeting of the club the Board of Governors announced the names of the officers of the club for the ensuing year. They are: President, Otto Armleder, of the O. Armleder Company; first vice-president, A. S. Brown, of the Summit Thread Company; second vice-president, C. F. Pratt, of the Jewell Carriage Company; secretary, R. D. Nibert, of the American Carriage Company; treasurer, M. J. McNamara, of the Phoenix Carriage Company.

The customary dinner and entertainment was thoroughly enjoyed by the members and their guests.

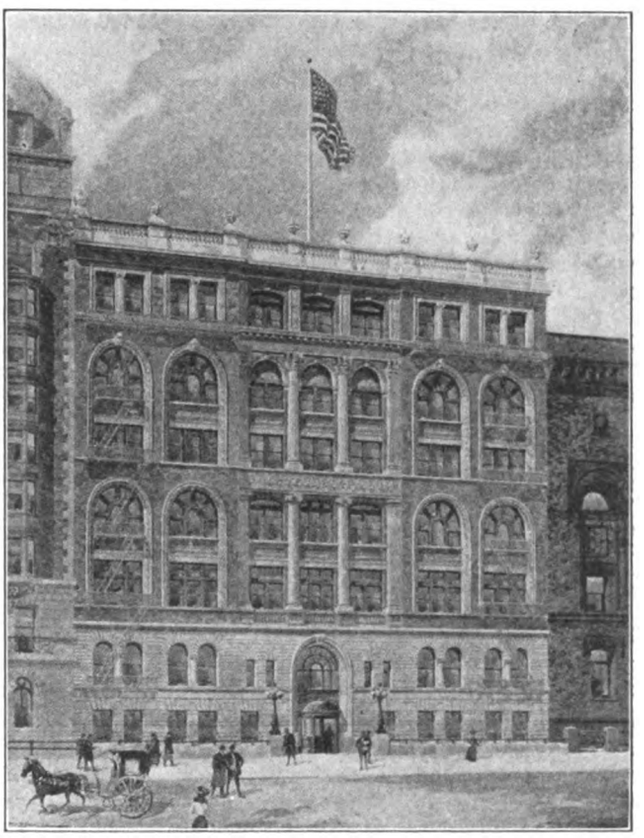
HANOVER, PA., WAGON CONCERN BUSY.

The Hanover Wagon Works, Hanover, Pa., owned by Hopkins & Co., who some time ago purchased the establishment from the assignee of the Ketterer Wagon Works, seems to have plenty of work, employing about seventy-five men. Most of the employes are citizens of Hanover and vicinity.

REGARDING THE TECHNICAL SCHOOL AND ITS NEW ASSOCIATIONS.

The General Society of Mechanics and Tradesmen of the City of New York, in whose rooms the Technical School for Carriage Draftsmen and Mechanics is now located, was organized on the 17th of November, 1785, by twenty-two representative mechanics. Its primary object was mutual aid, assistance in case of sickness or distress, and care for the widows and orphans of those who should die without property, being a modification of the organizations which grew up in the development of the mechanic arts in the various countries of Europe, and which were known by the general name of "guilds." The society at once became an assured success, and on the 14th of March, 1792, it was incorporated, pursuant to a charter granted by the Legislature, which has since been amended by several supplemental acts. Its membership now numbers about five hundred.

While its original purpose—benevolence—has ever continued



Mechanics' Institute, 18 West 44th St., New York, New Home of the Technical School.

to be its aim and pride, it has broadened its scope as its income permitted. In 1820 it founded the Mechanics' School and the Appretice's Library; in 1833 it inaugurated an instructive course in lectures; in 1856 it added reading rooms to its library; in 1899 it instituted free scholarships in the New York Trade School, and to-day its work may be classified as follows:

Pensions are paid quarterly, and donations are made in cases of necessity to indigent members, and to the widows and orphans of members.

The Circulation Section of the library furnishes diversified reading matter to such persons as may be properly guaranteed, and under such rules as may be determined upon from time to time. A special feature of the library is the reference department, where its many valuable books on various subjects may be consulted. It comprises the Demilt Section, the books being of a general nature, and the Slade Architectural Section, consisting of rare and useful works on architecture and kindred subjects.

Digitized by Google

The total number of volumes in the entire library is 100,027. Total circulation in 1907, 58,579 volumes.

The evening classes in the schools furnish to young men free instruction of a high order in free-hand drawing, clay modeling, mathematics, physics and architectural and mechanical drawing. Elementary and advanced instruction in these subjects is given by competent instructors. Classes are in session on Monday, Tuesday, Wednesday and Thursday evenings from October to May. A circular of information is issued for gratuitous distribution containing detailed information regarding the school.

Under the direction of the Literary Committee, lectures may be given from time to time before the classes in the schools upon subjects appertaining to the course of study.

To encourage young men in acquiring a practical knowledge of some useful trade, the Society maintains free scholarships in the New York Trade School.

Any mechanic or tradesman, a citizen of the United States, vouched for as to his character, is eligible to membership in this Society upon the payment of an initiation fee of one hundred dollars, which payment constitutes him a life member, there being no annual dues or assessments.

The Members' Room is supplied with the popular magazines and periodicals, as well as the local daily and weekly newspapers; open daily from 9 A. M. to 9.30 P. M.

The building, of which an illustration is herewith presented, is of recent construction and the class rooms are arranged to permit of the greatest amount of light possible to enter by day, and equipped with modern electric lamps for use at night, which are a vast improvement over the gas lights formerly used by the pupils. The structure is eight stories high, equipped with an elevator. The stairs are of marble and steel construction.

The carriage class closed the present term on April 10th, just prior to which time the pupils of the class of 1907-8 presented their instructor, Professor Johnson, with a token of the esteem in which he is held, in the form of a handsome gold Masonic charm, which was appreciated by its recipient.

The annual banquet given under the auspices of the Board of Trustees of the school will be dispensed with in the future because of the affiliation of the carriage school with the Society of Mechanics and Tradesmen.

The graduates for the season just closed are: William Gysbers, of Dubuque, Iowa; Carl Hamann, of New York City; John P. Sehl, of Toronto, Canada; Andrew F. Stone, of New York City; August A. Riepe, of New York City; Clarence D. Patterson, of Amesbury, Mass.; William H. Clark, of Amesbury, Mass.

CARRIAGE CONCERN INCORPORATES.

With a capital stock of $300,000, the United States Carriage Company has been incorporated at Columbus, Ohio, by C. M. Ayers, Catherine Meyers, Fred. C. Meyers, E. N. Meyers and H. C. Meyers. The incorporation will take over the business of the partnership of the same name.

JOHN C. MEYER & CO. TO MOVE.

About June 1st, John C. Meyer & Co. will remove their main office and mills to Lowell, Mass. Their present mill at Jamaica Plain, Boston, is a four-story structure equipped with the most modern machinery for spinning, winding and dyeing spool threads, but it seems scarcely large enough to meet all requirements, so they have bought a large factory in Lowell.

SALES MANAGER CHANGES POSITIONS.

R. P. Henderson, formerly manager of sales for E. A. Ames & Co., Owensboro, Ky., has recently connected himself with the sales department of the Parry Mfg. Co., Indianapolis, and will in the future occupy the position of assistant sales manager for this company.

MADE PRESIDENT OF NEW CARRIAGE CONCERN.

George E. Deeds, for many years well and favorably known as the senior member of the firm of Deeds & Manley, St. Louis, Mo., has been made president of the new Union Carriage Company, of St. Louis. He also becomes a stockholder. Mr. Deeds will be in charge of the selling end of the business, a duty with which he has had many years' experience, and his knowledge in that branch of trade will be of material benefit to the concern.

NEW YORK WORK HORSE PARADE.

New York City, which held a work horse parade last year, proposes to make the event permanent, and preparations are already in progress to hold the affair this year on Decoration Day, which is also the day a similar parade is held in Boston. The Woman's Auxiliary to the American Society for the Prevention of Cruelty to Animals, which in conjunction with the New York Team Owners' Association and kindred organizations, made such a splendid success last year, is sending out circulars askig for voluntary contributions to defray the expenses of the parade. It is proposed to increase the number of classes of exhibitors and thereby extend the parade's influence for the better care of work horses generally throughout the city. Prizes will be awarded to the owners and drivers of horses for the purpose of creating a spirit of competition to develop a better class of work horses. These subscriptions should be sent to Mrs. James Speyer, 257 Madison Ave., New York City.

DULL TIMES AN UNKNOWN QUANTITY HERE.

According to the following statement, Cartier, Chapman & Co., Ludington, Mich., are not complaining about dull times, and the pessimist is not lingering about their premises:

"Our factory has run without even hesitating during the past year; we have been extremely busy at all times on poles and shafts; our business is rapidly increasing, and the winter just past has been the most successful one we have ever had in the sleigh trade. We are rapidly building up a large business on both these lines, and the so-called crisis or financial panic, as far as we were concerned personally, was an unknown quantity."

PROVIDING FOR IMMEDIATE SHIPMENTS.

A. J. Miller & Co., Bellefontaine, Ohio, manufacturers of carriage bodies, canopy tops, seats, etc., have recently let the contract for an addition to their factory, to be built as soon as the weather will permit. This building will be 60 ft. by 150 ft., three stories high, built of brick and slow-burning construction.

This building will be used as a wareroom, their intention being to carry in stock at all times all their styles so that they can ship the same day an order is received. This will be quite an accommodation to their customers as well as a convenience to themselves.

ON A TRIP TO EUROPE.

John S. Burdick, a graduate of the Technical School, and for three years employed in the drafting department of J. M. Quinby & Co., Newark, N. J., sailed on March 31st for Europe, where he will remain possibly for a year. Mr. Burdick will visit the larger cities and finally locate permanently at Paris.

CARRIAGE MANUFACTURERS DINE.

The Carriage Manufacturers' Association, of Cambridge, Mass., held its monthly meeting and dinner at the Revere House, Boston last month, thirty-five members attending. President Charles Waugh acted as toastmaster.

Digitized by Google

TRADE NEWS FROM INDIANAPOLIS AND OTHER PARTS OF THE STATE.

Indianapolis, Ind., April 3, 1908.

The spring vehicle business is still a bit slow, although it begins to show some signs of improvement. Without doubt a good spring opening in which all vehicle dealers and manufacturers could take part, furnishing some attractive form of entertainment, would do much to open up the 1908 business in a satisfactory way. However, the lack of a local organization precludes this and dealers are hoping that things will soon be humming as they were at this time last year.

David M. Parry, president of the Parry Mfg. Co., is being urged to act as a member of a committee to investigate the need of tariff revision as has been proposed by the Government. He is in receipt of a number of letters from manufacturers in all parts of the country and will probably accept the place.

The Indiana Carriage Company, 27 North Capitol Avenue, has taken the local agencies for the H. A. Moyer Carriage Co., the Kaufman Buggy Co., and H. H. Babcock & Co. for 1908. During the recent automobile show week they did $3,000 worth of business in excess of their regular business.

Harmon & Hall, who recently obtained the Marion County and Indianapolis agencies for the Studebaker Bros. Mfg. Co., have decided to handle the Studebaker automobile line, including pleasure and commercial vehicles. John Primrose, who has been identified with the line for twenty-two years, has charge of the Studebaker business of the company.

The second annual automobile show was held here during the week of March 23d to 28th, and sales amounting to about $400,000 were made during the week. A hill climbing contest, parade, obstacle race and a supper and smoker were special features of the week. Dealers and manufacturers organized the Indianapolis Automobile Trade Assocation in order to look after the events of show week.

Finch & Freeman, who handle the Leader and Auburn automobiles, and the D. B. Sullivan Automobile Company, who handle the Lambert cars, have taken headquarters with the Indiana Carriage Company, on North Capitol Avenue.

M. L. Pittser, of Kirklin, has taken a position with the Racine-Sattley Company, of this city, and has been assigned to territory in the northeastern part of the State. He was formerly identified with the retail branch of the trade at Kirklin.

"The 1908 outlook is unusually bright," said P. Schneider, manager of the vehicle and harness departments of the H. T. Conde Implement Company, a few days ago. "While the vehicle business has opened slow, it is improving and we see little reason why business should not equal that of last year."

H. D. Johnson, Sr., general superintendent of the Studebaker Bros. Mfg. Co., South Bend, has gone to California with his wife to spend several weeks.

Parker & Son, Greenfield, have opened an implement and vehicle store and are already getting a very satisfactory share of the business in Hancock County.

Recently safe crackers attempted to blow open the safe of the Tri-State Implement and Vehicle Company at Evansville. While they damaged the safe to the extent of about $50, they failed to get the door open.

H. M. Rogers, Morristown, held his annual spring opening last month, and was assisted by Shell T. Brown, with the D. M. Sechler Carriage Co.; W. F. Orcutt, with the McFarlan Carriage Co.; D. C. Jones, with the Union City Carriage Co., and W. M. Martin, of the Columbia Harness Co. He took $3,000 worth of orders during the three days.

O. D. Carpenter, who has charge of the local office of the South Bend Chilled Plow Company, is confined to his home by illness, but expects to return to his desk within a few days.

Frank Brown, who recently purchased the stock of D. O. Marine, held a very successful implement and buggy opening recently at Swayzee, taking a very satisfactory lot of orders.

HORSE SHOW DATES FOR APPROACHING SEASON.

Of the many sports and pastimes which engage the attention of society none proves more pleasing than the modern horse show. Young in the category of established American institutions, horse shows have accomplished more in two decades than their original promoters expected in half a century. Landmarks in the social evolution of the country, they have indexed growing taste for healthful outdoor recreation, while their influence in the direction of improving the breed of horses and educating public taste in all matters pertaining to equipage has been truly astonishing.

Notwithstanding the financial disturbances of the last few months preparationse are completed for an unusually large number of horse shows in 1908, the most important of which we give below:

New York, N. Y. (Durland's), April 21st to 23d.
Brooklyn, N. Y., April 28th to May 1st.
New York, N. Y. (Speedway), May 2d.
Baltimore, Md., May 21st to 23d.
Philadelphia, Pa., May 25th to 30th.
New York, N. Y. (work horse parade), May 30th.
Boston, Mass. (work horse parade), May 30th.
Plainfield, N. J., June 4th to 6th.
Atlantic City, N. J., July 20th to 25th.
Long Branch, N. J., July 29th, August 1st.
Bar Harbor, Me., August 18th to 20th.
Narragansett Pier, R. I., August 20th to 22d.
Newport, R. I., September 7th to 9th.
Syracuse, N. Y., September 14th to 19th.
Mineola, N. Y., September 24th to 26th.
Morristown, N. J., September 24th to 26th.
Louisville, Ky., September 28th to October 3d.
Brockton, Mass., September 30th to October 2d.
New York, N. Y. (National), November 16th to 21st.
Chicago, Ill. (International), November 28th to December 5th.

HISTORIC WAGON DESTROYED BY FIRE.

The antiquated wagon once owned by John Brown, in which he made many pilgrimages during his crusade against slavery, was destroyed by fire at Iowa City, Iowa, on March 13th. The wagon was left there by Brown forty-eight years ago and has been preserved during that time by Herbert S. Fairall, a pioneer newspaper man of Iowa City.

FIRE IN MULHOLLAND PLANT.

A very destructive fire occurred in the plant of the Mulholland Spring Company, Dunkirk, N. Y., on April 1st, causing a loss of about $5,000 in carriage parts and materials on hand. The loss is covered by insurance.

LET US THEN BE UP AND DOING.

Tell us, are you advertising
In the same old foolish way
That your grand-dad did before you,
And persist, "It doesn't pay?"

Think the whole world knows your address,
"'Cause it hasn't changed in years?"
Wouldn't the pathos of such logic
Drive a billygoat to tears?

"Just a card" is all you care for,
Hidden, lonesome and unread,
Like the sign upon a tombstone
Telling folks that you are dead.

Wake up, man, and take a tonic,
Bunch your hits and make a drive,
Run a page and change your copy,
Advertise and keep alive!

—Southern Engineer.

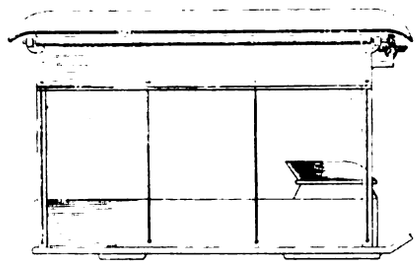
Digitized by Google

Recently Granted Carriage Patents

Space will not permit us to illustrate all new patents pertaining to the vehicle industry issued by the Patent Office. We therefore select those that we consider of the greatest interest to our readers.

Curtain-Operating Means for Vehicle Tops. John H. Tickerhoof, of Portage, Pa. No. 879,218. Patented February 18, 1908.

This ivention contemplates certain new and useful improvements in vehicle tops and relates particularly to curtain-operating means, and the invention has for its object an improved con-



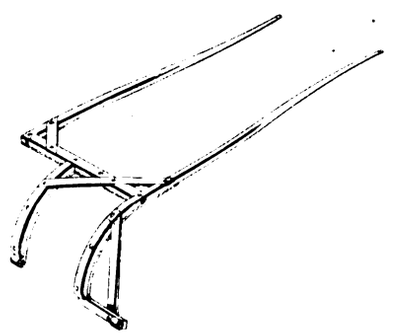
struction of apparatus of this character which may be easily manipulated by the driver from the wagon seat to raise the side curtains of the wagon or other vehicle.

One of the claims is, in the combination with a vehicle top and its curtains, of rollers upon which the respective side curtains are adapted to wind, each of said rollers being provided with a worm gear, a worm meshing with the respective worm gears, pinions mounted to turn with the respective worms, supports for said worms and pinions, a supporting rod extending transversely of the top at the front thereof, a bracket slidingly mounted on said rod, and a manually operable gear wheel journaled on said bracket and adapted to be carried thereby into engagement with either of said pinions.

Vehicle Shaft. Owen Geertsma, of Broadland, S. D. No. 879,456. Patented February 18, 1908.

This invention relates to a special construction of shafts for buggies, carriages, or the like.

As is well known in the formation of country roads a two-



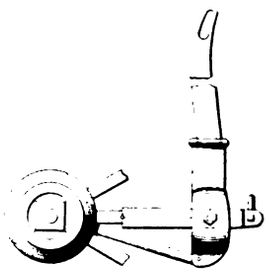
horse path is usually provided and it is often advantageous if a single draft animal hitched to a vehicle can walk or travel in one of the paths made by two-horse driving. The construction of buggy shafts embodied in the present invention is such as to permit of hitching the horse or other draft animal to the vehicle so that said animal may travel in one of the paths in the road made by driving horses abreast.

The construction of the shafts as above described and the manner of bracing the same and making them entirely rigid is very desirable in view of the fact that it is necessary that the shafts be possessed of extreme substantiality for the purposes for which they are employed. The arrangement of the coupling member relative to the shaft is such that when a draft animal is hitched to the shafts, said animal will be arranged at one side of a central line passing through the vehicle to which the shafts are attached, thereby permitting the draft animal to readily travel in one of the paths made by driving two horses along roads.

Spoke Extractor. Louis P. Parent, of Waterbury, Conn., assignor of one-half to Peter R. Larocque, of same place. No. 879,308. Patented February 18, 1908.

This invention relates to an improvement in spoke extractors, that is, a device for extracting spokes from hubs, and particularly broken spokes.

In operation the jaws are set onto a spoke and brought to a bearing therein, the yoke clearing the outer end of the spoke. When the clamping jaws are brought to a close bearing on the spoke, the outer end of the fulcrum brace is lifted to engage with the hub of the wheel, and then force applied to the handle to turn the head outward or away from the hub, and as the spoke is tightly clamped it follows that it will be extracted from the hub.

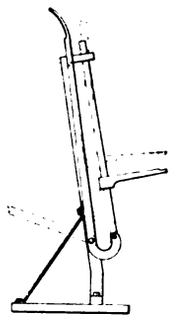


It may here be remarked that as the head is turned by the handle the carriers rock in the head so that a pull upon the spoke is in direct line and the greater the draft upon the spoke the more firmly the jaws are forced into contact with it.

Lifting Jack. Elbert E. Ryan, of South Bend, Ind. No. 879,592. Patented February 18, 1908.

This invention relates to lifting jacks. One object of the invention is to provide a simple, inexpensive, durable and efficient lifting jack embodying such characteristics that the load may be easily and quickly lifted.

Other objects of the invention reside in the provision of a lifting jack whose operating lever is connected directly with the lifting bar and has its inner end curved and connected with the lower end of the lifting bar so that in the operation of the device there is a cam action between the operating lever and the lifting bar, there being an arm adjustably carried by the lifting bar and



held in adjusted positions upon the latter by frictional engagement therewith.

To lift the load it is merely necessary to place the lifting arm under the load and then pull or throw the operating lever downwardly upon its pivot which causes the curved or cam inner end of the operating lever to force the lifting bar upwardly by a cam

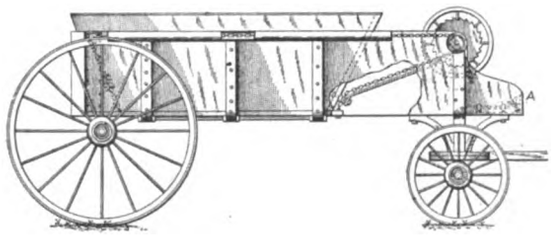
Digitized by Google

action into substantially vertical position, as indicated by dotted lines.

Dump Cart. Ezra A. Mathes, of Philadelphia, Pa., assignor to Elihu E. Smith, of same place. No. 879,826. Patented February 18, 1908.

This invention consists in various improvements in the details of construction of dump carts or cars, whereby such a cart is provided which may be easily and conveniently operated and the construction be comparatively inexpensive and at the same time strong and durable.

The parts being in the position shown the cart is loaded. When it is desired to unload, the operator kicks the catch A from engagement with the end of the foot lever and thus releases the shaft, which permits said shaft to rotate freely, allowing the chains to pay out from the spools and the hinged sections,

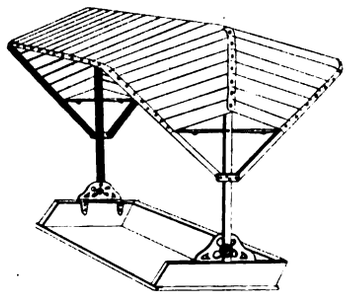


comprising the bottom of the cart, to fall down under the weight of the load thereon. By turning the hand wheel the chains are then wound upon their respective spools and operate to pull the hinged sections into the position shown and again close the bottom of the cart, being held in such position by means of the pawl which is in constant engagement with the ratchet wheel on the side of the hand wheel.

Vehicle Top. James Rogers, of Chicago, Ill. No. 880,574. Patented March 3, 1908.

This invention relates to vehicle tops, and is particularly applicable or useful in the construction of automobiles, although it may be used on vehicles in general. A feature of the invention is the use of channel or angle bars for making the bows, as well

The invention is illustrated in connection with a wagon top, but it may be readily applied to automobiles and the like with as convenient means for attaching the cloth or cover to the bows.



the necessary changes in the supporting structure.

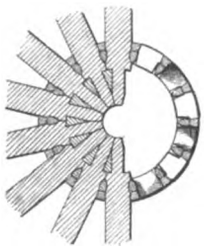
The claim is: A vehicle top having bows formed of channel metal with the flanges presented inwardly, a cover over the bows, and fasteners extending through the cover and the bows and clenched on the inside of the bows between the said flanges.

Vehicle Hub. David L. Tschantz, of Canton, Ohio. No. 880,605. Patented March 3, 1908.

The object of the present invention is to provide means whereby the spokes of a vehicle wheel are bound or locked in the hub proper, the binding or locking device being in addition to the usual mortise into which the tenons or inner ends of the spokes are inserted.

In the accompanying illustration is represented the hub body, which is of the usual construction, provided with mortises; but the hub body within itself forms no particular part of the present invention, except that a hub body must necessarily be employed to construct a hub in which this improvement is embodied. The metal band is formed of a length equal to or somewhat greater than one-half of the hub body, which band is provided with spoke mortises or openings.

In assembling the parts above described, the hub body is placed in the metal band and the parts so positioned with refer-

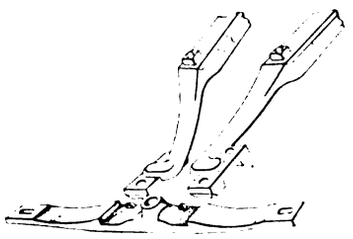




ence to each other that the mortises will register. After the metal band and the hub body have been placed in proper relative position, the spokes are placed in proper position, or in other words the tenons are forced into the mortises. After all the spokes have been properly connected the ring with the integral spoke retaining tangs is forced into the metal band, the tangs coming directly under the band, said tangs being located beyond the tenons, or in other words between the bodies of the spokes and near their inner ends. The tangs are formed substantially V-shaped, and are so formed for the purpose of causing the side face of the tangs to abut against the side face of the spokes.

Vehicle Gear. Stephen N. Birdsall, of Dayton, Ohio, assignor to Isaac Cornwell, of Northumberland, Pa. No. 880,620. Patented March 3, 1908.

This invention relates to an improvement in vehicle gear, the

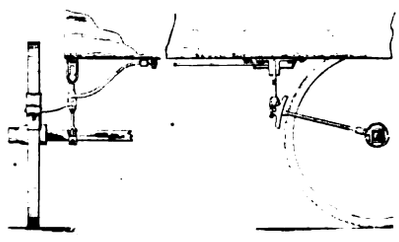


object being to provide simple and effective means for securing the reach irons to the head block plate, whereby all lateral strains are removed from the clips connecting the parts. The reach irons are bent at right angles at their forward ends, as shown, and terminate in the ends which, as shown, are parallel with the reach irons and are of a length sufficient to project on both the front and rear sides of the head block plate.

By making the reach irons separate from the head block plate the construction is simplified and cost of manufacture lessened, and by providing the two parts with engaging shoulders all the strains are practically taken from the clips which secure the reach irons, head block plate and head block together.

Vehicle or Wagon Brake. Frances A. Grace, of Sharon, Pa. No. 880,791. Patented March 3, 1908.

This invention relates to an improvement in vehicle or wagon brakes. The accompanying drawings show the side elevation of



this improved wagon brake, attached in position to an ordinary vehicle, and an end elevation of the same.

In operation, when the brake lever is operated to set the shoes against the wheels the strain is transferred from the rod to the levers, and from this to the brake levers, the rods holding the

Digitized by Google

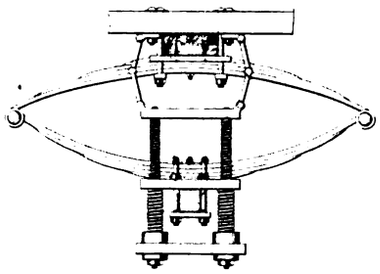
stirrups rigid when the strain is in a direction toward the front of the vehicle, and when the brake is released, the movement of the parts is in an opposite direction.

By this construction and arrangement of a vehicle brake, the same will be found particularly useful when used on wagons having a spring-supported body, as all strain and undue tension, due to the operation of the brake, is transferred to the rear axle.

Spring for Vehicles. Leverett C. Haynes, of Boston, Mass. No. 880,884. Patented March 3, 1908.

This invention relates to vehicle springs and consists in combining with the ordinary spring an auxiliary mechanism constructed of peculiar construction adapted to operate as a yielding support for the load when the same has proved to be more than the normal amount that the primary spring should bear; the mechanism also provides yielding check devices for preventing the spring from rebounding to a dangerous degree.

The claims are for springs for vehicles, comprising an elliptical spring attached to the body of the vehicle and to the axle;

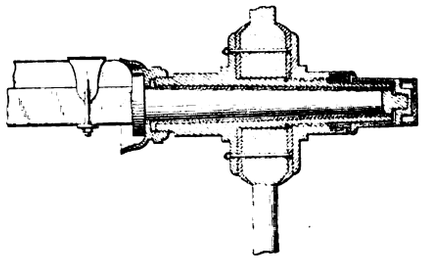


an axle bar attached to the axle; extension springs attached to said axle bar and extending downward to, and attached at their lower ends to the lower ends of rods, and said rods which extend upward through the said extension springs and through the said axle-bar to the stop-bar; and the said stop-bar; toggles constructed to connect said stop-bar to the body of the vehicle; closed springs attached to the said stop bar and extending downward through the said axle bar and the said extension springs and rigidly attached to the lower ends of the said rods and said extension springs substantially as and for the purpose set forth.

Vehicle Wheel. Martin L. Porter, of Redding, Cal. No. 880,915. Patented March 3, 1908.

This invention relates to improvements in vehicle wheels and more particularly to the hubs and boxings thereof, and the means for securing the spokes in the hubs.

The object of the invention is to provide a simple, durable, and comparatively inexpensive wheel hub in which the spokes are firmly secured, and in which they may be quickly replaced when

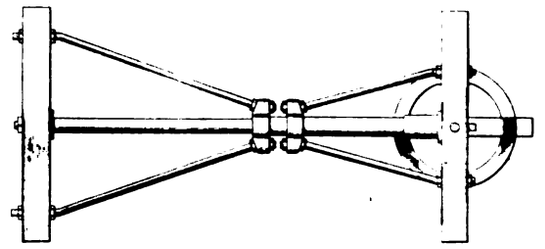


broken; a further object being to effect improvements in the construction of the box and the box retainer and the spokes whereby a worn box may be removed and replaced by even an unskilled person without damage to the wheel.

One of the claims is, in a vehicle wheel, a hub having a perforated fixed collar anod a screw threaded portion adjacent thereto, an imperforate collar on said screw threaded portion, two clamping plates between said collars, perforated to register with the perforations in the fixed collar and the perforations in one plate being countersunk, spokes between said plates, and bolts through said spokes, plates and the stationary collar with their heads in said countersunk perforations, and the nuts on said bolts engaging with the stationary collar.

Vehicle Reach. Fred. W. Bleckley, of Hazleton, Pa. No. 882,615. Patented March 24, 1908.

The present invention provides novel means for connecting the fore and hind gears of vehicles, whereby the strain and jar incident to pulling or backing, or to the shifting of the load when



ascending or descending grade, or to variation in height of one side or the other of the road, or to the dropping of wheels in a rut, or their passage over obstructions are equalized, or compensated for without wrenching or disabling the parts.

The coupling means embody a rod which passes through openings of the front and rear bolsters, the front end of the rod being apertured to receive the king bolt and the rear end being threaded to receive a set nut. This bar sustains a major portion of the pulling force. A tube encircles the rod and is provided at opposite ends with flanges. The flange is bolted or otherwise secured to the hind gear, whereas the flange is connected with the fore gear in a manner to admit of the two gears having relative angular movement without producing strain so that the fore and hind gears may occupy different relative angular positions without subjecting the coupling means to torsional strain. The flange fits in the transverse groove and closes against the rear side of the upper member of the front bolster. Pulling strain upon the tube is transferred to the flange, thence directly to the respective gears. In the event of the team backing, the fore and hind gears are braced by the ends of the tube abutting against the inner or opposing sides of the respective bolsters thereof.

RECENTLY EXPIRED PATENTS OF INTEREST TO THE CARRIAGE TRADE.

Patents Expired February 10, 1908.

445,974—Vehicle spring. E. Cook, Kalamazoo, Mich.
445,981—Dumping wagon. J. T. Dougine, Chicago, Ill.
446,156—Whiffletree. W. H. Sholl, Hobart, Ind.
446,203—Vehicle spring support. J. S. Cochennour and N. T. Remy, Olney, Ill.
446,232—Wagon end gate. B. S. Kearney, Franklinton, N. C.
446,308—Dumping wagon. W. E. Welch, Buston, Ill.

Patents Expired February 17, 1908.

446,415—Vehicle running gear. S. E. Baughman, Taylorville, Ill.
446,416—Vehicle axle. O. W. Beach, Fort Morgan, Colo.
446,437—Vehicle gearing. J. L. Dolson, Charlotte, Mich.
446,508—Road cart. S. E. Burke, Edon, Ohio.
446,562—Wagon. W. C. Murphy, Salem, Mass.
446,615—Whiffletree. N. P. Steffenson, Winchester, Wis.
446,656—Spring gear for vehicles. G. E. Bartholomew, Cincinnati, Ohio.
446,754—Vehicle seat. J. M. Johnson, Arneckeville, Texas.

Patents Expired February 24, 1908.

446,856—Machine for drilling tires and felloes of wheels of road vehicles. J. Faske, Cincinnati, Ohio.
446,884—Road cart. W. L. Pike, Groton, N. Y.
447,097—Vehicle top. C. F. Zoller and L. S. Burrows, Foreston, Ill.
447,109—Running gear for vehicles. E. Funk, Cincinnati, O.

Patents Expired March 3, 1908.

447,289—Spring draft attachment. H. Barber, Chicago, Ill.
447,312—Fifth wheel for vehicles. W. W. Grier, Hulton, Pa.
447,391—Road cart. H. W. Willis, East Williston, N. Y.
447,499—Two-wheeled vehicle. J. Stahl, Grinnell, Iowa.

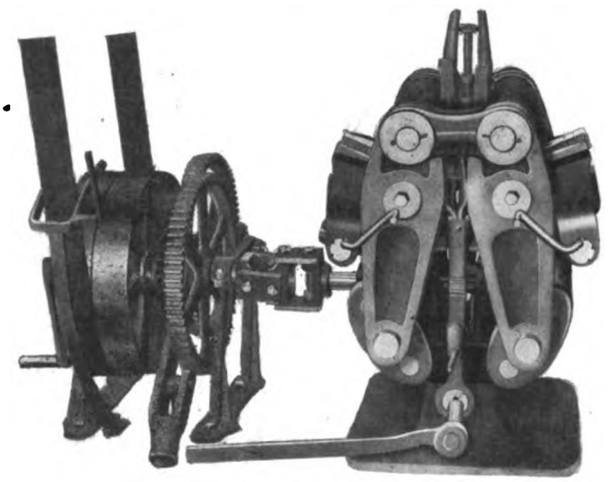
The above list of patents of interest to our patrons is furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Bldg., New York City.

Digitized by Google

NEW KALAMAZOO TIRE SETTER.

A new and very effective cold tire setter is illustrated herewith. The manufacturers are the Kalamazoo Tire Setter Company, Kalamazoo, Mich. This tire setter is made to be operated either by hand or power. The power machine, which is here shown, weighs 1,275 pounds and sets tires rfom the lightest buggy tires up to wagon tires 3 by ¾ in. This machine will set twenty tires an hour. The hand machine weighs 1,050 pounds. Power can be attached to the hand machine at an expense of $40. The especially good points claimed for the Kalamazoo tire setter are as follows:

The adjustable heads, which will take any standard wheels; the grips, which prevent thin wheels from "cupping"; the construction of the grips, which are made of tool and machine steel —tool-steel face and machine-steel body—eliminating chance of



Kalamazoo Power Tire Setter.

breaking; the anti-kink device—the only way to set a light tire without kinking it; the head keys, which prevent the grips from slipping on the tire and breaking the teeth off; the right and left hand screw, which pulls both heads together at the same time; the three-point bearing, which always pulls in a circle with the wheels, not on a straight line; the roller bearings, made under the heads, which in conjunction with the three-point bearing, reduce friction to a minimum; and the delivery of the power. Once you have started to upset a tire, you do not have to back up. A "disher" is furnished free with each machine.

The manufacturers will be pleased to send you a catalogue with prices, and also beg to call your attention to their advertisement in this issue.

REMARKABLE RECORD FOR VARNISH HOUSE.

Observation will affirm the statement that the automobile is subjected to more hard usage than the horse-drawn vehicle, especially those used for pleasure purposes. With the mud, dust and gas fumes which accompany the automobile there is sufficient disastrous element to make a severe test of the varnish, and that which will stand up under it is certainly a sturdy article.

Judging by the records gathered at automobile shows, it appears that the use of the Valentine Varnishes is very general among makers of this class of vehicles; in fact, it is noteworthy. At the Chicago show 82 per cent. of the cars were finished with the Valentine goods, and the Importers' Salon in New York was remarkable in that 100 per cent. of the exhibitors used Valentine varnishes. This is a remarkable testimony.

JOSEPH N. SMITH & CO. BURNED OUT.

A building at Detroit, Mich., partly occupied by Joseph N. Smith & Co., manufacturers of carriage mountings, was recently burned. They place their loss at $35,000.

WHAT FORESTRY HAS DONE.

Many people in this country think that forestry had never been tried until the Government began to practice it upon the National Forests. Yet forestry is practiced by every civilized country in the world except China and Turkey. It gets results which can be got in no other way, and which are necessary to the general welfare.

What forestry has done abroad is the strongest proof of what it can accomplish here. The remarkable success of forest management in the civilized countries of Europe and Asia is the most forcible argument which can be brought in support of wise forest use in the United States.

The more advanced and progressive countries arrive first and go farthest in forestry, as they do in other things. Indeed, we might almost take forestry as a yardstick with which to measure the height of a civilization. On the one hand, the nations which follow forestry most widely and systematically would be found to be the most enlightened nations. On the other hand, when we applied our yardstick to such countries as are without forestry, we could say with a good deal of assurance, by this test alone, "Here is a backward nation."

The countries of Europe and Asia, taken together, have passed through all the stages of forest history and applied all the known principles of forestry. They are rich in forest experience. The lessons of forestry were brought home to them by hard knocks. Their forest systems were built up gradually as the result of hardship. They did not first spin fine theories and then apply those theories by main force. On the contrary, they began by facing disagreeable facts. Every step of the way toward wise forest use, the world over, has been made at the sharp spur of want, suffering, or loss. As a result, the science of forestry is one of the most practical and most directly useful of all the sciences. It is a serious work, undertaken as a measure of relief, and continued as a safeguard against future calamity.

The United States, then, in attacking the problem of how best to use its great forest resources, is not in the position of a pioneer in the field. It has the experience of all other countries to go upon. There is no need for years of experiment with untried theories. The forest principles which hundreds of years of actual practice have proved right are at its command. The only question is, How should these be modified or extended to best meet American conditions? In the management of the National Forests the Government is not working in the dark., Nor is it slavishly copying European countries. It is putting into practice, in America, and for Americans, principles tried and found correct, which will insure to all the people alike the fullest and best use of all forest resources.

OUTLANDISH NAMES OF HORSES.

What a pity it is that owners will not devote more ordinary care and intelligence to the naming of their trotters and race horses, says Francis M. Ware, the well-known horse expert. Any one of these may develop ability to enroll upon the scrolls of perpetual fame some hideous appellation inflicted upon him by an unimaginative proprietor. The trotting world is the most pronounced offender in this respect, and throws euphony and good taste to the winds far too generally. Horses named after some friend usually render that helpless individual's cognomen a by-word and a jest, and the average race card comprises a most wonderful collection of animals thus handicapped, with others merely initialed; others laboring under weird combinations of the sire and the dam, etc., mostly inappropriate and grotesque. A tabulated pedigree is becoming a most extraordinary spectacle and very hard to memorize because of the outlandish methods used in naming its ingredients.

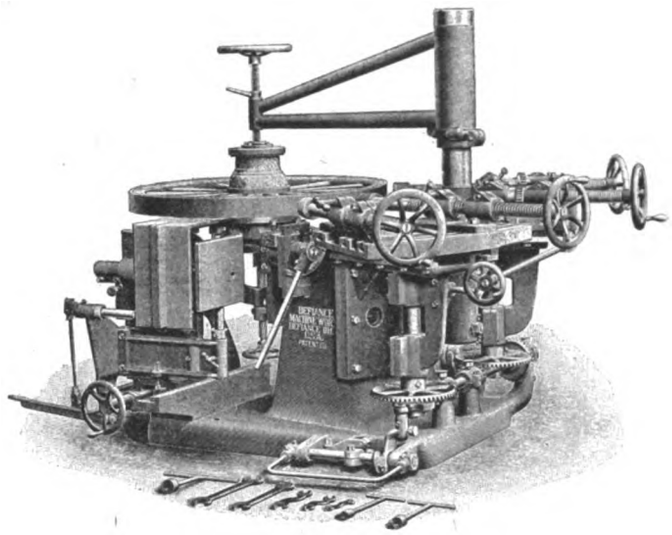
The stock of vehicles, etc., of Den & McGinnis, in Caddo, Okla., has been destroyed by fire.

Digitized by Google

AUTOMATIC WHEEL RIMMING MACHINE.

This engraving represents an automatic wheel rimming machine, designed by the Defiance Machine Works, Defiance, Ohio, for the use of automobile, carriage, artillery and wagon wheel builders, for the purpose of automatically placing the rim or felloe on the wheel. It will handle wheels up to 54 in. diameter and smaller, with hubs as large as 10¼ in. diameter and under, successfully handling sawed or bent felloes.

Previous to its introduction this work was accomplished entirely by hand labor, but the saving effected by the use of this new machie has proven so large that it has been universally adopted by all the principal vehicle wheel builders, and it is recognized as one of the greatest labor-saving devices so far invented for the wheel maker. The old method of driving the felloes on to the spokes by hand not only proved expensive, because of this slow process, but it required the services of a skillful workman, and at best many of the felloes would be split and the spoke tenons fractured by reason of violent and uneven pounding.



By this modern machine over three times more work of a better quality is secured with an inexpensive boy to handle it, and the splitting of felloes and the breaking of tenons is entirely eliminated, and much neater work produced without the sound of a hammer.

The four plungers are fitted to heavy saddles on top of the frame, and they are thoroughly gibbed to it. They are powerfully geared and driven in a horizontal plane similar to the motion of an engine piston, and they are adjustable to or from each other, or to and from the wheel to accommodate wheels of different sizes. The first plunger simply starts the felloe on the tenon, each succeeding plunger is set in closer to the wheel, the last or fourth plunger driving the felloe tight up against the shoulder of the tenon. It is only necessary for the operator to start the tenon into the first hole in the felloe and turn the wheel, which is completed at a single rotation.

C. D. FIRESTONE REPORTS IMPROVEMENT IN BUSINESS.

C. D. Firestone, president of the Columbus Buggy Company, in speaking of the vehicle business, said that it is now showing much improvement and that additional men are being employed at his big plant. "We are now receiving mail orders," said Mr. Firestone, "and this is a most encouraging sign, as it shows the people are beginning to buy without having to be urged by traveling men. We can see quite an improvement in our business, and within a short time we expect to materially increase our working force at the factory."

VEHICLE AND HARNESS TRADE IN MEXICO.

Finest Victorias Come From France and Germany, but United States Excels in Light Vehicles.

In the business of manufacturing carriages, buggies and other light vehicles a beginning has been made in the Republic of Mexico, says Consul-General Philip C. Hanna, of Monterey, but as yet most of such vehicles used here are imported, the United States having by far the larger part of the trade. A drawback to the manufacture of such vehicles in Mexico is the lack of the proper kind of timber. This timber is secured from the United States, and factories generally find it cheaper to import finished parts from that country, especially the wooden parts, and put them together in their own factories.

Frequently vehicles are brought in unpainted and untrimmed, or "in the white," as it is termed in the trade, and painted and trimmed here. The duty on a painted carriage or buggy ranges from 23 to 33 cents, American currency, per kilo, which equals 2.2 pounds, while the charge on an unpainted and unfinished vehicle ranges from 6 to 17 cents per kilo. Thus some dealers say they find it profitable to do the painting and finishing of seats and tops here, although the material for these purposes is also generally imported from the United States. Cushions and trimmings ready to put on pay a duty of 15 cents per kilo, as compared with 33 cents paid on the weight of a finished vehicle. Parts of buggies and carriages, such as spokes and felloes, are admitted at rates ranging from 3 to 8 cents per kilo.

The finest victorias used here are mostly imported from France, though some are imported from Germany. The class of French vehicles sold here bring from $1,600 to $2,000 or more. Victorias of equally high grade are made in the United States, but it is said American manufacturers have not been able to compete in price. On the other hand, Germany is now exporting similar vehicles at much lower prices than those made by France, but perhaps lacking in the style and finish of the French makes.

American light vehicles are favored here because they are well made and adapted to the climate. Recently experiments have been made in Monterey in the manufacture of bodies for buggies and carriages, but it has not been an entire success. Notwithstanding the fact that kiln-dried woods are brought from American factories for this purpose—panels and other thin parts being made here—it is said that they have a tendency to split after they are finished and painted.

In all light carriages and buggies the United States is able to sell cheaper than France or Germany, and a local dealer estimates that thirty such vehicles from the United States are sold here to one from Europe. I am informed that all rockaways and similar vehicles used here are of American make.

Farm wagons and the heavier wagons used by miners are brought almost exclusively from the United States. On these the duty ranges from 11 to 28 cents per kilo for the unfinished vehicle, according to weight. The only heavy vehicles manufactured are ox carts, of which a large number are used here. The wood used in the making of the wheels of these carts is imported from the United States.

At the present time most of the harness used in this country is made in Mexico of Mexican leather. The tanning industry has been developed to a point where a good quality of leather for harness making is furnished at home, and the workmanship of the local harness factories satisfies the local demand up to very fine and expensive harness. The latter is imported mostly from France, although Germany and the United States have a share in the trade. These sets of French harness cost from $500 to $1,000, and as might be expected are not in general use. In medium, and even low grades of harness, American manufacturers do considerable business in Monterey, but the local factories dominate the market.

N. A. Buttles & Co. have engaged in the vehicle and implement business in Wenatchee, Wash.

Digitized by Google

OBITUARY

E. M. Brannick.

E. M. Brannick, manager of the Portland, Ore., branch of the Studebaker Bros. Mfg. Co., died recently from the results of injuries sustained by a fall from a train. Mr. Brannick was one of the best known men of the trade in the Northwest where he was for many years engaged in the interests of the firm he represented, and his death will be greatly deplored. For thirty years he had been identified with the Studebaker sales force, and through his intimate knowledge of the line and the needs of the Western trade he very materially aided in building up the business of that section.

Mr. Brannick leaves a widow and one son, E. J. Brannick, who was associated with his father in representing the Studebaker house.

Percy T. Fish.

Percy T. Fish, formerly secretary of the Fish Bros. Mfg. Co., Clinton, Iowa, died suddenly at Spokane, Wash., on March 14th. Deceased was a son of the late Titus R. Fish, one of the original Fish brothers of wagon fame. For a number of years after the death of his father he was actively engaged in the business, but retired some time ago. The interment took place at Racine, Wis., the deceased's birthplace.

Andrew Luman.

Andrew Luman, a well-known carriage builder of Utica, New York, and suburbs, and one of the oldest residents, died on April 1st at the home of his daughter in Utica, aged eighty years. Mr. Luman was proprietor of the Luman Carriage Works. He was born in Germany and came to this country when very young and settled, upon arrival, in Yorkville, a suburb of Utica, where he resided until about a month ago.

Samuel Reynolds.

Samuel Reynolds, one of the oldest and best known of the pioneer wagon makers in southeastern Wisconsin, died at his home in Kenosha, Wis., on March 11th. Mr. Reynolds had been connected with the Bain Wagon Works for over fifty years, and had been interested in many other lines in Kenosha. He was a native of Wales, and went to Kenosha in 1842.

Joseph H. Parvis.

Joseph H. Parvis, president of the Ohio Carriage Manufacturing Company, died suddenly on March 15th, at his home in Cincinnati. The deceased was at one time vice-president of the Emerson-Fisher Carriage Company, and was a 32d degree Mason.

Fielding A. Hyatt.

Fielding A. Hyatt, for several years connected with P. P. Mast & Co., Springfield, Ohio, died suddenly in a drug store in Indianapolis, Ind. He was sixty-four years of age and was at the time with the H. T. Conde Implement Company, of Indianapolis.

John B. Williams.

John B. Williams, for many years in the carriage business at Somerville, Mass., died at South Everett, Mass., on March 5th, after an illness lasting two years. He was fifty-nine years of age and a native of York, Maine.

J. L. Eschmann.

J. L. Eschmann, an old-time wagon maker and the last of the pioneer manufacturers of Louisville, Ky., died recently, of a stroke of paralysis sustained almost a year ago, at the age of seventy-five years. Mr. Eschmann was a highly esteemed German citizen and one of the first manufacturers to operate a plant in Louisville. Almost sixty years ago he went to that city and began the manufacture of wagons. He, with two brothers who had come to this country from Germany when Mr. Eschmann was fifteen years of age, owned the plant, which was known as the Eschmann Wagon Company. A disastrous fire in 1870, which greatly damaged the plant, followed by the financial panics of the seventies, forced Mr. Eschmann to discontinue the business.

TENDENCY IN WOOD PRESERVATION IN THE UNITED STATES.

In the United States the tendency in wood preservation is to modify the processes rather than to change the preservatives. At present, creosote and zinc chlorid, pure or in mixture, are the only preservatives which are in general use. A constant effort is being made to overcome the chief drawbacks to the use of each of these. Processes have been developed which involve the compression and expansion of the air in the wood structure to expel some of the expensive creosote, leaving only a film along the cell walls. The amount of oil left in the timber is reduced, and in consequence the cost of the treatment as well. In other cases zinc chlorid and creosote are mixed together and injected into the timber in the form of an emulsion, the object being to reduce the cost of the treatment and to prevent the zinc chlorid from leaching out of the timber. Sometimes the timber is impregnated with zinc chlorid, and only a narrow outer layer is filled with creosote; or again, glue and tannin are employed in the effort to plug up the outer wood cells and so keep the salt in the interior.

AN OLD-TIME CARRIAGE BUILDER.

A retired carriage maker, T. Statler, of Allentown, Pa., recently celebrated his ninetieth natal day. A number of the aged man's friends and relatives gathered at his home and held a quiet celebration of the event. Mr. Statler has only retired from active work within the last few years and still possesses much of his former mental and physical vigor. For over sixty years he was an active and up-to-date carriage builder and is one of the few survivors of the old school.

WILLOUGHBY CARRIAGE COMPANY ELECTS DIRECTORS.

The stockholders of the Willoughby Carriage Company, of Utica, N. Y., held their annual meeting recently and elected the following directors: Thomas R. Proctor, S. T. Proctor, J. F. Maynard, H. R. Johnson, Joseph Rudd, John I. Roberts, E. A. Willoughby and E. M. Galle.

GOODYEAR DETACHABLE TIRE FOR FISK RIMS.

The Goodyear Tire and Rubber Company are putting out something new in the Goodyear detachable tire for Fisk rims. The only effort necessary in changing a Goodyear detachable onto a Fisk rim is the substitution of Goodyear side flanges for those furnished with the rim.

SHORTSVILLE WHEEL CO. NOW A STOCK COMPANY.

The Shortsville Wheel Company, Shortsville, N. Y., has been changed from a co-partnership to a stock company, retaining the former firm name. The capital stock is $125,000, and the incorporators are Clarence Heath, Sydney L. Heath, Chas. E. Brown and Edward T. Sheffer. They will continue to manufacture light wheels for fine carriages.

Digitized by Google

News of the Trade

NEW FIRMS AND INCORPORATIONS.

A. O. Mason has engaged in the vehicle business in Marysville, Mo.

C. F. Weidner has engaged in the vehicle business in Manning, Iowa.

H. Teetzen has opened up a stock of vehicles and hardware in Tampa, Kans.

Cashier & Barger have opened a new stock of vehicles, etc., in Lovilia, Iowa.

M. A. Larson has opened a vehicle and implement house in Hordville, Neb.

Curtis & Bumgardner have engaged in the vehicle business in Weatherby, Mo.

Van Beck & Eberhardt have opened a new stock of vehicles, etc., in Hancock, Iowa.

Jacobson & Dale have opened a new stock of vehicles and implements in Story City, Iowa.

The Jacksonville (Fla.) Buggy Manufacturing Company has been organized by W. F. Stark.

The J. L. Roebuck Company has engaged in the vehicle and hardware business in Shawnee, Okla.

Killgore & Stilz, wagon manufacturers at Louisville, Ky., have incorporated, with a capitalization of $40,000.

The Dallas Buggy and Wagon Company, of Dallas, Texas, has increased its capital stock from $10,000 to $20,000.

The S. R. Austin Lumber and Mercantile Company, of Tamora, Neb., is putting up a building and will add a line of vehicles.

The Iowa Manufacturing Company has been organized at Grinnell, Iowa, for the purpose of manufacturing buggies, carriages, wagons, etc.

The Leek Carriage Company and the Cynthia Carriage Company, both of Cynthia, Ky., have consolidated and will open a factory in Lexington, Ky.

The Bristow-Worsham Company has been incorporated at Richmond, Va., for the purpose of manufacturing and selling buggies and other vehicles. Capital stock, $15,000.

The Thomas Wagon Company has been organized at Lititz, Pa. The capital stock is $20,000, divided into $100 shares. The directors are: J. C. Brobst, J. C. Brubaker, H. H. Gingrich, Aaron Habecker and N. B. Leaman.

The Lynchburg Buggy Company has been incorporated at Lynchburg, Va., with a capital stock of $50,000, for the purpose of manufacturing buggies. The officers are: President, E. E. Hughes; vice-president, R. T. Mahone; secretary-treasurer, L. E. Wingfield.

The Anderson Carriage Company, of Detroit, Mich., has increased its capital stock to the extent of $100,000. The increase is preferred stock. The present stockholders of the company have subscribed for $30,000 of the amount and the remainder is offered to the public.

BUSINESS CHANGES.

G. S. Henry has sold his stock of vehicles, etc., in Taylor, Neb., to J. R. Bowlby.

W. T. Smith has sold his stock of vehicles, etc., in Hale, Mo., to Eames & Thomas.

J Rebok has purchased the stock of vehicles, etc., of Rebok & Cremer, in Toledo, Iowa.

E. E. Reese has purchased the stock of vehicles, etc., of S. J. Funkhouser & Son, in Shelby, Neb.

F. F. Grosse has sold his stock of buggies and implements in Beemer, Neb., to Geo. W. Hutton.

A. H. Butterick has sold his vehicle and implement business in Garrison, Iowa, to William Cregor.

The business of the H. F. Keyes Wagon Company, at Depot Square, Mass., has changed hands, Henry I. Cheney, the owner, retiring, and being succeeded by his son, Clifton W. Cheney and Walter W. Wright, who have formed a partnership.

Ham & Starr have succeeded Lynch & Starr in the vehicle and implement business in Edmond, Okla.

O. D. Means has purchased the stock of vehicles, etc., of Mathew Leach & Sons, in Fullerton, Neb.

Klug Bros. & Neuman have sold their vehicle and implement business in Pierce, Neb., to L. Gispert.

G. A. Shostrom has sold his vehicle and implement business in Gothenburg, Neb., to D. W. Ferguson.

Wm. Kupers has purchased the vehicle and implement business of Fred. Weber, in Pendleton, Ore.

Stark & Blanch have purchased the vehicle and implement business of A. H. Hewett, in Arlington, S. D.

Henderson & Hershman have sold their hardware and vehicle business in Norton, Kans., to G. E. Kelley.

Thos. Gaw has succeeded to the vehicle and implement business of W. H. Hopkins, in Haviland, Kans.

R. R. Deacon has succeeded to the buggy and implement business of Deacon Bros. & Co., in Butler, Mo.

Sears & Rivers have succeeded to the buggy and implement business of Fuller & Sears, in Grinnell, Iowa.

John Schueth has succeeded to the vehicle and implement business of Kaup & Schueth, in West Point, Neb.

Sells & Martin have purchased the vehicle and implement business of S. T. Rhode & Co., in Randolph, Iowa.

John A. Henderson has purchased the vehicle and hardware business of Clark & Eaton, in Elberton, Wash.

Greenland & Lunde have suceeded F. Greenland in the buggy and implement business in Cooperstown, N. D.

Willenborg & Burlage have been succeeded in the vehicle and implement business in Dyersville, Iowa, by Wilson & Burlage.

The firm of Bundy & Weeks, carriage dealers at St. Johnsburg, Vt., has dissolved partnership, Clinton B. Weeks retiring and being succeeded by Fred. S. Woods.

The firm of S. Blimline & Co., carriage manufacturers, West Reading, Pa., has been dissolved by the retirement of G. Miller. Mr. Blimline will continue the business.

The firm of M. Nusbaum's Sons, Utica, N. Y., has dissolved partnership. H. N. Nusbaum will continue the business. The firm manufacture wagons, carriages and sleighs of all kinds.

FIRES.

Fire destroyed the carriage factory of Frank Frederick, New California, Ohio, recently, entailing a loss of $2,500. The plant had been operated by Samuel South.

The buggy and wagon repository owned by S. Farkas, at Albany, Ga., was destroyed by a recent fire; loss, $16,000.

Fire in the carriage shop of Lee Jantry, New Haven, Conn., caused a loss of $500.

The vehicle and implement store of F. N. Chaffee, in Carrington, N. D., has been damaged by fire to the extent of $3,000.

MISCELLANEOUS.

P. M. Andript & Sons will erect a brick wagon factory in Louisville, Ky.

John P. Cahill, of Wilmington, Del., is about to erect a new carriage factory to cost $11,000.

The Bender Wagon Company, Texarkana, Texas, has been placed in the hands of a receiver.

W. H. Ainsworth has purchased the factory of the Pate Bros. Company, Monroe, Wis., to make buggies and harness.

The Davenport Wagon Company, of Davenport, Iowa, has begun the construction of a factory building and warehouse.

A new building is about to be erected in Kansas City, Mo., which will be occupied by the W. L. Norris Carriage Company.

A petition in involuntary bankruptcy was filed in the United States Court at Utica, N. Y., against Edward McGraw, a carriage dealer of Valley Falls.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

The Limit; Not Yet.

Not long ago some high automobile construction authorities, in their discussion on the details of work, seemed to think that a limit had been reached in the line of important inventions and improvements and that hereafter we would enter upon a sort of settling down process which would eventually culminate in a standardization of construction.

There is an earnest desire among many builders to get onto a sort of permanent foundation as regards what an automobile ought to be. Incessant modifications and changes and improvements year after year are, in one sense, a hindrance to the fuller development of the industry. Besides, these changes are expensive, taking them in the aggregate. And yet the spirit of mechanism and invention cannot be checked. It is only necessary to keep in touch with the records of the Patent Office to understand the force of the unrest with present accomplishments. Of patents, like books, of which the Psalmist long ago complained, there is no end. These inventive struggles, or spasms they might not inappropriately be called, serve as an education to those coming up from below in point of practical knowledge; they stimulate. If the patented improvements get no farther than the Patent Office they form a basis of instruction to and for shop mechanics.

Standardization is, theoretically, a long way off. Practically it is very close at hand. Certain broad and general methods and principles of construction are fixed. The relative advantages of this, that and the other device and method are yet to be determined. The bottom of it all is seen in the universal desire to test—test—test. Edison used to say he averaged three thousand tests on a pending process before he could safely reach a conclusion.

Medium-Priced Cars.

For medium-priced cars the United States automobile builders hold the palm. Our exports show that the American medium-priced car is in high and increasing favor. The French, if they have erred in the general management of their industry, have erred in the direction of superb work. Our understanding of the French character and of French standards goes a long way in explaining this. The English builders are less prone to put all their eggs in this basket. The Americans import many of their very highest priced cars and content themselves with a moderate and yet ample degree of enterprise in the production of very fine work. The present drift is away from rather than to the most costly work, in fact it has always been in that direction. The result is, the establishment of an industry upon a stronger commercial foundation. The French builders are now suffering, in a degree, for the error they have made, and they cannot speedily adjust themselves to the situation.

Suspension.

Particular study is now being devoted by automobile designers and builders to the subject of suspension, from a scientific as well as a practical point of view. The carriage builders long ago reached scientific results through practical efforts. Nothing better than a combination of laminated springs to minimize rolling and vertical oscillation, it is declared by recent expert investigation, has been demonstrated. The internal friction of laminated springs is an excellent automatic absorbent. The practical value of having plates of different thicknesses is dwelt upon as a means of improving the damping function of springs. The aim, of course, is to so construct and suspend springs that the wheels will follow the inequalities of the road surface without raising or lowering the body. The aim of experts is to so accomplish this purpose as to minimize or entirely avoid the need of special appliances, as shock absorbers. The problem is under process of practical solution.

Back Into Line.

It is worthy of passing observation at least that most, possibly all, of the automobile manufacturing concerns which became financially embarassed during the past two years or so are emerging successfully from their misfortunes. It is all the more creditable that this favorable turn has been made during this period of financial depression. The causes leading to the temporary embarassment, as all know, had no relation to a lessened demand, but to inability to promptly meet accruing obligations connected with the establishment and equipment of the initial plants. Additional capital has in all cases been forthcoming, at least in sufficient abundance to permit of the full running of the plants, though not to wipe out the obligations in full. The miscalculations which led to temporary suspensions have served as instruction and warning to all others, and in future very little repetition of such failures need be apprehended.

Working on Elementals.

The desire of some designers of automobiles to eliminate the universal joint feature for the straight line drive cannot be accomplished as readily as it would theoretically appear to be possible. The universal joint in mechanism generally, was a triumph of mechanical genius and is the pivot around which swings a great many valuable and practical economies. The straight line drive is an ideal construction, but certain practical obstacles interfere with its easy attainment. The fundamental laws of mechanics are being tested over again, as it were, in the efforts of automobile designers to reach the highest and at the same time most practical results in construction. The very highest form of construction has not yet been accomplished.

Digitized by Google

A Buckboard Car.

Most attention along the commercial vehicle line has been given to the construction of heavy vehicles with a capacity of from one to as high as six tons' load. The reason for this was, and is, the existence of a demand for heavy vehicles. Very little, or comparatively little, attention has been given to the construction of light commercial vehicles. The reason for this is also apparent, viz., that those who could use such a light self-propelled wagon could get along with a horse, which would not cost as much.

It is gradually being demonstrated that what is good for heavy traffic and heavy loads is also good for light loads. Some builders have been induced to give some attention to the construction of a commercial vehicle of the buckboard type ,of some fifty or more cubic feet capacity, and which they figure can be put on the market for possibly three or four hundred dollars. The occasion for this interest is that small merchants have expressed a desire to handle a portion of their merchandise in an experimental way with such a vehicle.

A few builders are making a comparative success of light automobiles, especially for professional use. This trade, it is understood, is growing. The light cars run well and are easily cared for. Just what can be done to create a demand for parcel and light load vehicles will probably be demonstrated soon. There is certainly a wide field for a trial. Self propulsion is growing in favor. Light gasoline cars for delivery purposes would appeal to department store interests and to a large number of merchants and small manufacturers.

Lighter Motor Business Wagons.

The gasoline motor business wagon is undergoing development along the lines of more liberal bearing surfaces, automatic lubrication, and the raising of seats to permit the mechanism to occupy the least possible space needed for the load. In recent makes the seat and footboard are well forward, thus overcoming a strong objection that has been urged on account of length. The cost of tires is overcome in some cases by iron tires. The rear wheels are high and the front low to permit short turning. The U. S. Government is now considering the use of vehicles so constructed, and, it is said, with favorable prospects for adoption. There is need of a cheap and reliable commercial vehicle which will carry ordinary loads at a moderate speed. The existing types of wagons are well fitted for the heavy loads they carry, but modifications are demanded to produce a vehicle for the ordinary light loads which constitute a large part of the aver-

The Globe Circlers.

The globe-circling stunt now attracting world-wide attention, when completed, will establish a few conclusions that will be of great benefit to the industry. In the first place it is a species of boldness and courage and self-confidence never witnessed. The northern wilds of Siberia are unknown except to a few sailing craft and bold hunters. The difficulties to be encountered are unknown. The Pekin to Paris run made the New York to Paris run possible. In some respects the dangers and probable obstacles are fewer. The frozen regions secure an open roadway; all the mountain ranges are to the southwest; the polar expanses to the northward. The bold men who will soon enter upon the serious portion of the task will deserve more honors than mere plaudits and decorations can confer upon them—if and when they enter Paris in the cars they started with.

Preparation for Contests.

Preparations are in a pretty forward state for the automobile contests for the coming year. This spirit needs very little indirect stimulation from manufacturers. They as a rule favor the contesting spirit, for it brings grist to their mills. Each club feels it is somehow behind the times if it has not a contest provided for. There will be a host of them. They will be short, they will be long, and some of them will cover several States. There are to be hill-climbing contests, economy trials, reliability runs, and every sort of activity.

The suggestion has been made to establish, or rather to centralize contests, to have, as it were, a central official contest, somewhat similar in purport to that of France, the result of which would go to establish superiority along whatever line would be determined and where all conditions would be equal. Manufacturers will hardly assent to such a proposition at present.

The Glidden Tour.

There was some danger that the contest for the Glidden trophy would degenerate into a semi-social contest in which the original purpose of reliability testing would be lost sight of. But by the action of the American Automobile Association, the fifth tour will be held strictly to the original design and purpose of reliability.

There is no doubt a desire upon the part of a considerable number of automobilists to participate in the excitement of such a contest and share in the enviable publicity accorded all participants if the social features were paramount. But the Glidden purpose would be eliminated and the importance of the tour to manufacturers would be diminished. All past criticisms made on the conduct of these tours have been covered by new rules. It is the intention of the association to make the coming tour a record-breaker for practical results.

Openings.

The automobile openings which have been held this spring in all sections were highly auspicious. Never before were exhibited such numbers of cars of all sizes and designs. The aim of the manufacturers and agents has been to show automobiledom at its best and they have succeeded. The industry has for the first time shown that it is thoroughly harnessed for the season.

No regard has been paid to commercial conditions. The manufacturers have taken it for granted that the public intend to use the automobile more than ever. The medium priced car is to the fore in these openings, but there is nothing in automobiledom which is not placed before the public from which to make selection.

Five Per Cent. of Good Roads.

When it is recalled that no more than 5 per cent. of the public roads of the United States are "good" it can be seen what is ahead of us in the way of road building. This statement was recently made by Representative Bell in Congress in presenting a bill looking to road work by the national Government. Mr. Bell, who has made a thorough study of the subject, says that 10 per cent. of the roadway is "fairly passable," and that the remaining 85 per cent. is "bad."

Sand and clay roads cost from $100 to $400 per mile, and macadam roads from $3,000 to $9,000 per mile. International jealousies oblige us to think of putting millions upon millions into battleships, while automobilists confine themselves to a fractional part of our highways and the farmers lose many times the cost of a fleet of battleships every year in pulling over bad roads.

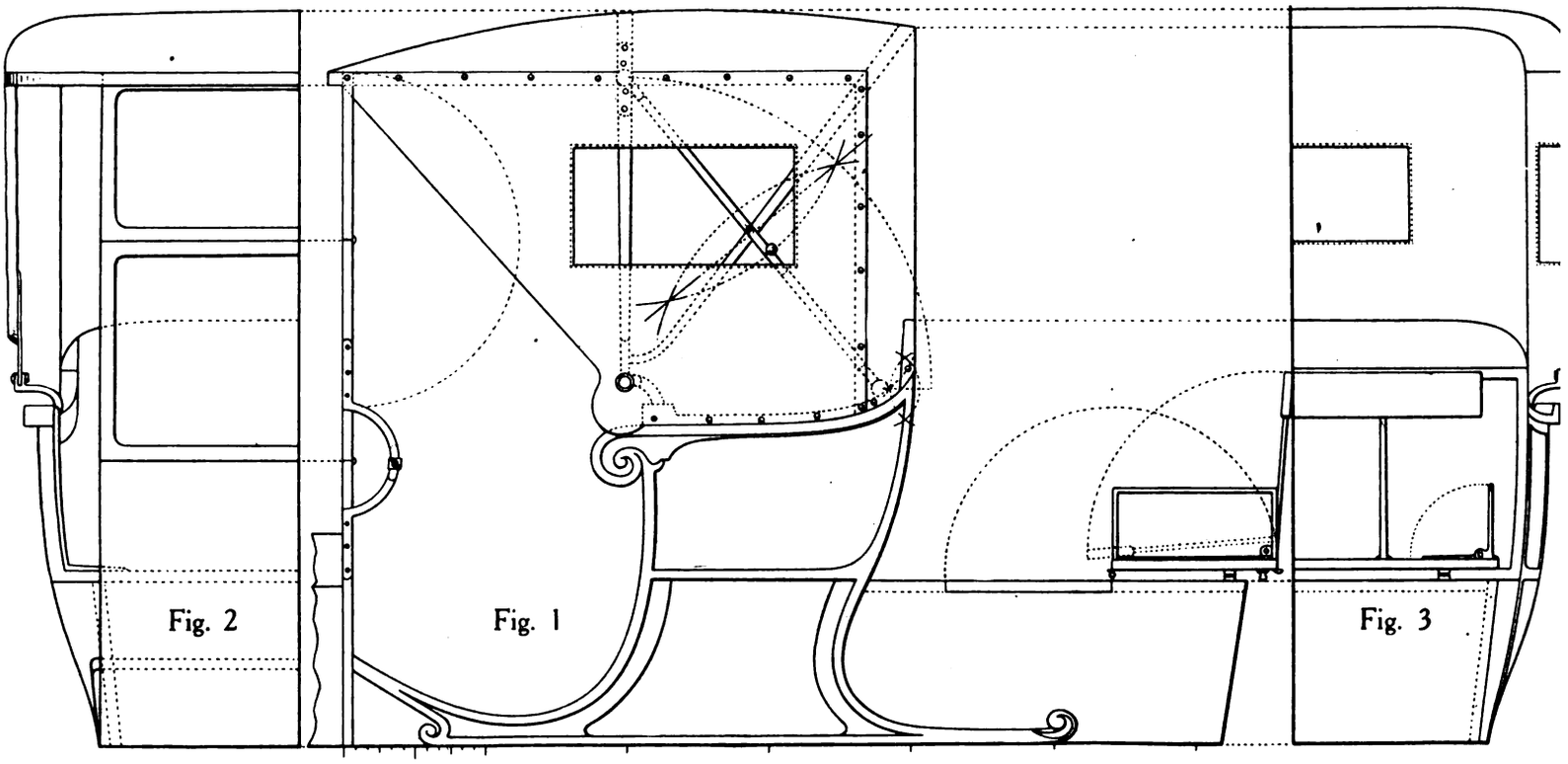
Digitized by Google

WORKING DRAFT OF LIGHT FOUR-PASSENGER RUNABOUT MOTOR BODY.

Drawing on this page.

The motor carriage has not advanced so far that we are at a stage where we cannot build up to higher levels. For in design we are, as it were, scarcely at the mean between zero and boiling point. Though every step forward is an advance to the higher degree the speed may be that of the coral insect toiler as it slowly and surely builds its adamantine floral submarine forest. But as long as the element of progress is infused into the life and construction of a design, the gamut is being scaled and the harmony of art and practice attuned.

For a light design of car, such as the runabout type, there is a broad commercial future, because there is a class of motorists who simply desire to tour by themselves unhampered by other occupants than a chauffeur, or act as chauffeur themselves, accompanied by a friend. A light and smart car, possessing the convertible convenience of taking up one or two extra riders, or in the place of these, suitable luggage for locking up within the inside measurements space of the body, will undoubtedly meet with a public acceptance.



Working Draft of Light Four-Passenger Runabout Motor Body.
Described on this page.

Such a design of car has been worked out in the working draft accompanying. The front body is plain but richly lined in ogee and irregular curvature, to individualize it from the body as a whole.

The front and hind body pillar pieces are fixed to the body individually or the front pillar can be made in one solid piece. The sides of the body are solid, while the top front quarter is framed and paneled. The hind seat, back rests and side rails hinge together in collapsible form and swing over into the body, thus forming a lock-up boot behind, where light luggage can be packed and safely locked up. The seat makes provisional seating for two, should the full accommodation be required.

The cape hood is made with two slats and projecting canopy slat, which is fitted with hinge and a boss center to slide up and down a rod fixed to the inside of the slat for the purpose, while the hinge allows the slat to turn up level with the top of the upright slat, for when the head falls down.

The covering of the hood is of dark drab waterproof twilling, and the side and back lights of celluloid. The head is held to its place by side joints. The wind scren is made to hinge in two places. The bottom light can be held at any angle on the quadrant slide.

The whole style of the car is smart and compact and most suitable for the purposes it is designed to meet. Fig. 1 represents the side elevation; Fig. 2, half front view; Fig. 3, half rear view.

The dimensions are: Length of body on bottom, 6 ft. 1½ in.; depth of side, 14 in.; length of front quarter on seat line, 19½ in.; length of top of side from back of corner pillar, 32 in.; length of top of quarter on elbow line, 32 in.; over curved end, 27½ in.

Depth of quarter on pillar line, 13½ in.; at back, 18 in.; width from seat to dash, 24½ in.; width of body on bottom, 32 in.; on top of side, 35 in.; width across front seat over all, 42 in.; over top of pillars, 44 in.; width across back on elbow points, 40 in. The bottom hind curved eye bracket and moulding stand out from the side ⅞ in. Width of hind seat, 14 in.; length, 35 in. Length of back rest, 32 in.; width, 4 in.

Depth of head from seat to slat, 3 ft. 11½ in.; width side ways, 4 ft. 2 in. Width of front canopy slat, 25 in. Size of side light, 19 in. by 10 in.; back light, 20 in. by 8 in. Length of body from dash to curved eye of bottomside pillar, 5 ft. 2 in.

WHERE THE CARRIAGE BUILDER'S EXPERIENCE IS A GREAT ADVANTAGE.

The following statement of Col. Geo. M. Studebaker regarding the necessity of comfort as well as speed and durability in automobiles is particularly interesting in that it shows the great advantage enjoyed by carriage builders when engaging in the manufacture of automobiles:

"During the first few years of the development of the self-propelled vehicles the prime object of every maker was to produce a car that would run in a satisfactory manner. The question was, will it go? Will the chassis withstand a reasonable amount of wear?

"The best engineers in this country and abroad have given

Digitized by Google

years of study to the problems involved in perfecting the automobile, with the result that it may now be said to have reached a point where further changes from an engineering and mechanical standpoint are not likely to be of an important nature, but rather in the line of minor refinements. From a mechanical standpoint, then, the better grade of gasoline automobiles may now be said to have become practically standardized.

"It was absolutely necessary to the success of the automobile industry that these mechanical problems should be thoughtfully and carefully worked out. In their anxiety, however, to satisfactorily solve the problems of motive power, some manufacturers seem to have overlooked the fact that the automobile is primarily intended for use as a conveyance.

"Now, when we come to consider the automobile from the standpoint of a vehicle, the problems which confront us do not differ materially from those which are met in the production of fine horse-drawn vehicles. When our company engaged in the manufacture of self-propelled vehicles, we naturally enjoyed a great advantage over the manufacturers of cars whose experience in the building of vehicles of any kind only dated back for a brief period, and who had no previous experience along the line of coach building. Our designers, body makers, trimmers and painters all had years of experience in the production of vehicles of the very finest grade, and those who drive our cars receive the benefit of their knowledge and skill.

"A number of leading manufacturing firms in Germany have tion to the riding qualities of the car, to the quality of the trimming and to the finish. The prospective purchaser of an automobile may choose any one of half a dozen well known makes with the assurance that it will, mechanically, give satisfactory service. Since, however, the pleasure of the purchaser and his family or friends who ride with him will be largely dependent upon the easy-riding qualities of the car, it is most important that the car be chosen whose maker has in its construction recognized the prime importance of its comfort as a conveyance for passengers."

DEVICE FOR INDICATING POWER DEVELOPED IN CYLINDERS OF MOTORS.

Hugo C. Gibson, a member of the Automobile Club of America, has donated to the machine shop of that institution a Hospitalier Carpentier Manographe, to be used for indicating the power developed in the cylinders of motors in connection with tests of cars on the dynamometer.

The manographe is a comparatively new device, and by its use very accurate and interesting results have been obtained in testing internal combustion engines as to pressure, rate of expansion, points of ignition, etc., of the gases within the cylinder. It produces, by photographic process, diagrams showing accurately what takes place within a motor cylinder, so far as the pressure is concerned. A ray of light is projected upon a prepared plate by a vibrating mirror; its horizontal movement is controlled by a flexible shaft, which is connected directly to the crank shaft, or in such a way that it revolves in unison with same. The vertical movement of the beam of light is controlled by the pressure in the cylinder, the inside of which is connected with the instrument by a tube.

The combination of these two movements causes the beam of light to travel in an irregular line upon the prepared plate, recording the pressure at every point of the piston's movement. The diagram thus produced enables the engineer to determine the horsepower which is being exerted within the cylinder walls, also whether the valves are properly timed, and the pressure at the inlet, exhaust and compression points. Only by comparing the indicated or internal horsepower with the brake horsepower can the efficiency of a motor be determined.

The frequent use of this instrument should tend to improve gas motor efficiency for the same reason that the application of the steam engine indicator has materially improved the steam engine.

SOLID RUBBER WHEELS FOR MOTOR CARS.

Consul-General Thornwell Haynes, of Singapore, advises that a manager of a gutta-percha company there has recently been granted the exclusive privilege of making, selling and using in the State of Perak, of the Federated Malay States, for fourteen years, a wheel for motor cars or other vehicles manufactured in one entire piece and wholly from rubber, gutta-percha, or other elastic material. The consul adds that such an innovation, if successful, will prevent the dangerous bursting of tires, overcome climatic changes, and by its many points of superiority would seemingly prompt American manufacturers to experiment in this direction.

CONVERTIBLE MOTOR CAR.

In the Fashion Plate section of this number, on page 33, we present two illustrations of a motor car, designed and built in England, which can be used as an eight-seated car, and alternately as a five-seated vehicle, with a luggage compartment behind. On both of these varied forms of body, Hopper's patent extension hoods have been fitted. This hood or top was illustrated and described on page 467 of the March issue of The Hub. Separate removable hoods are used for each form of body.

To accomplish this no little skill and ingenuity had to be exercised. The proportions of the seats have been carefully considered, keeping the whole length of the car body within reasonable limits. This has been done without sacrificing any of the comfort in the seating, which is so essential for a touring car. The enclosing of the second seat, by the continuous back and the high side-doors which are fitted, make it the most comfortable seat in the car. The bringing of this seat closer up to the front one than is usual has many advantages which will be fully appreciated by motorists.

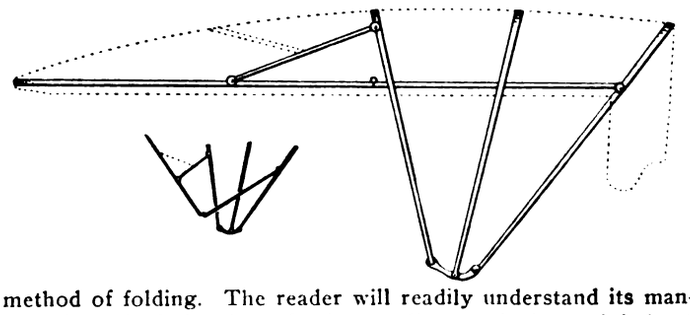
The fittings for the double set of folding hoods have necessitated some very clever arrangement of the ironwork, both on the exterior and the interior of the bodies, to ensure the maximum of security and convenience with the minimum amount of fitting. The large mudguards provided are fixed independently of the hind portion of the body, whether the seats or the luggage cover is fixed.

The method adopted for securely fixing the hind seats in position is ingenious. As the weight of the seats and hood is considerable these fittings have to be very carefully thought out, and form part of the permanent construction of the body, while they are very conveniently situated and accessible for changing this portion of the body from seats to luggage compartment.

The body is mounted on a 60 h.p. six-cylinder Napier chassis, and although it is made to seat eight persons comfortably, it has a very compact appearance, due to the careful proportions of the whole, making it a very convenient and comfortable touring car.

AN INGENIOUS FOLDING TOP.

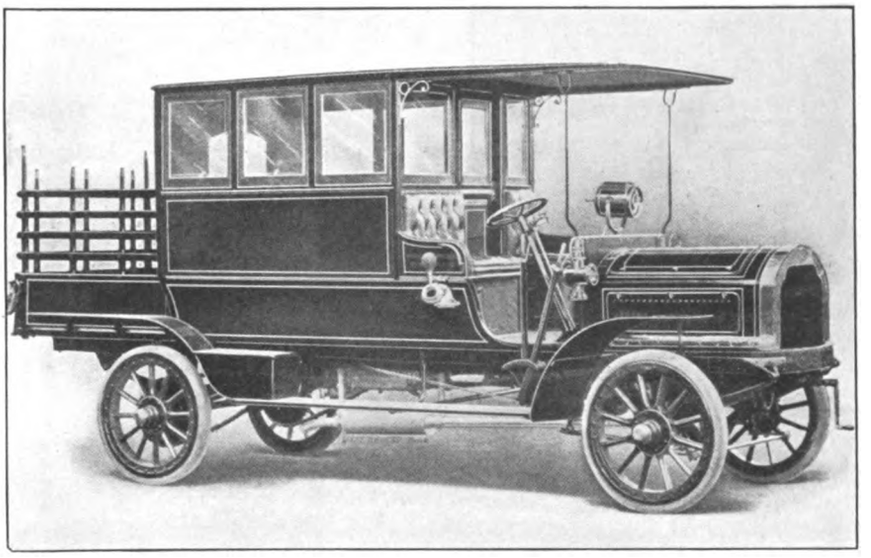
Accompanying we present an illustration of a folding top for use on automobiles or other vehicles. It is very novel in its



method of folding. The reader will readily understand its manner of manipulating by referring to diagram in lower left hand corner. This top is the product of a German manufacturer and is worthy of more than passing notice.

Digitized by Google

Illustrated Automobile Section, April, 1908.



Combination Passenger and Baggage Car.
Built by Mack Bros. Motor Car Co., Allentown, Pa.

For receiving hotel guests at railroad stations or steamboat landings this car has no equal. As will be observed baggage accommodations are provided, with seating capacity for twelve passengers. Admission to the passenger section is gained through the front.



Motor-Driven Police Patrol. **Described on page 38.**
Built by Rapid Motor Vehicle Co., Pontiac, Mich.

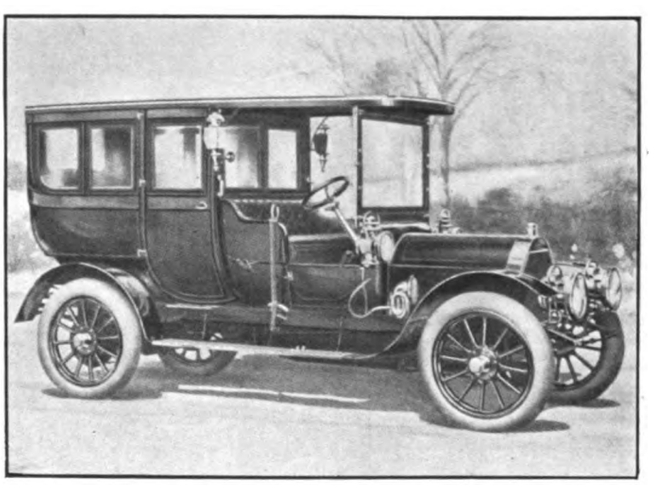
As a means for reaching the scene of disturbances quickly motor-driven police patrol wagons are becoming very popular. The above illustration is an example of one placed with several police departments in the larger cities, giving very satisfactory results.

Digitized by Google



PLYMOUTH GASOLINE CAR
Built by
COMMERCIAL MOTOR TRUCK CO., PLYMOUTH, O.
CAPACITY 4,000 POUNDS.

GREAT ARROW SUBURBAN
Built by
THE GEORGE N. PIERCE CO., BUFFALO, N. Y.
FOUR CYLINDER 40 HORSEPOWER.

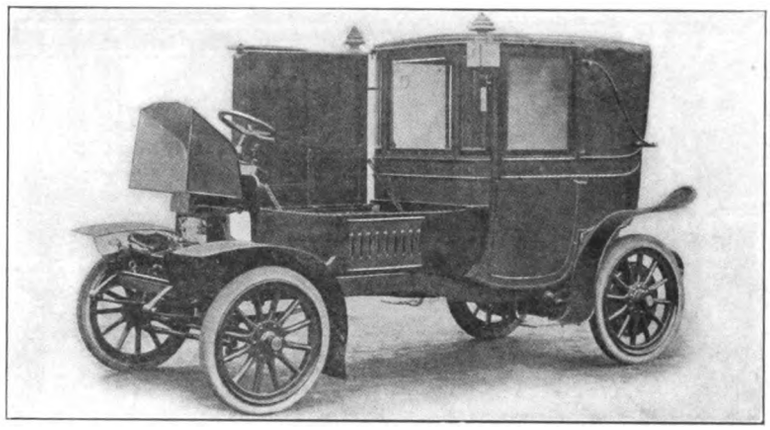


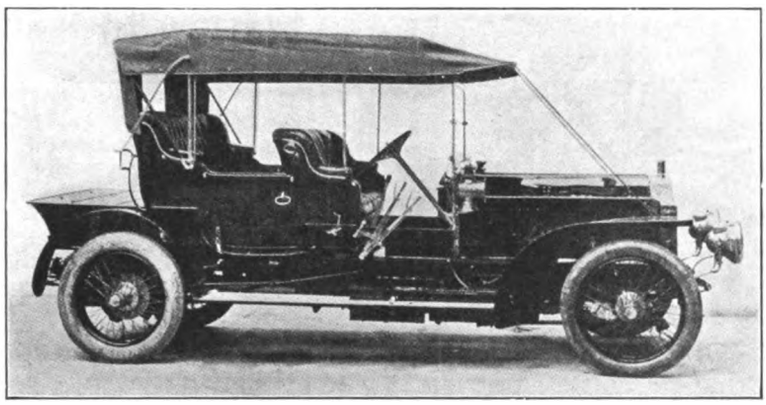


PLYMOUTH GASOLINE CAR
Built for
FIRE INSURANCE PATROL WORK
LEAVING QUARTERS.

Digitized by Google

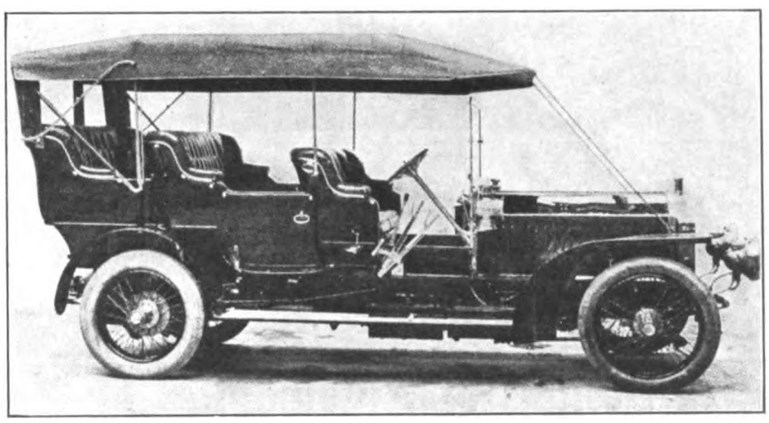
BENT FRAME ELECTRIC LANDAULET
Built to
AFFORD EASY MEANS FOR REACHING
BATTERIES AND MOTORS.



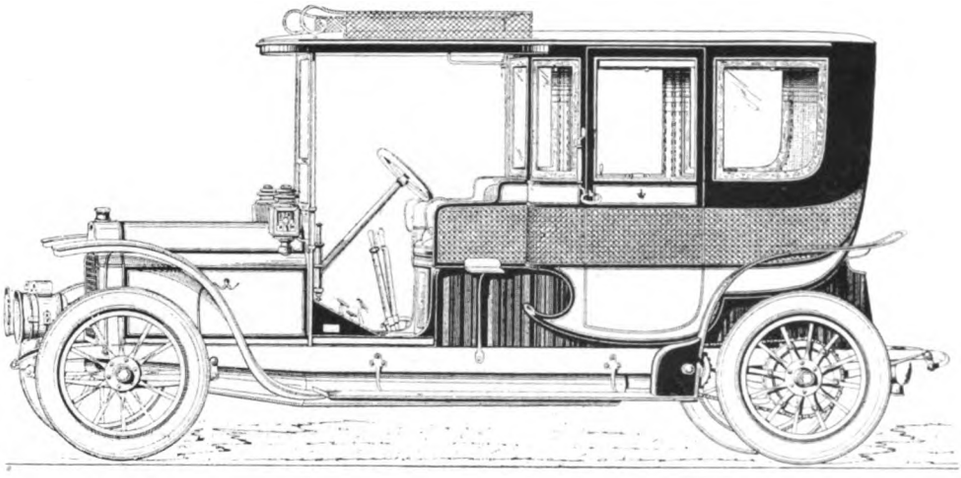


CONVERTIBLE 60 H. P. NAPIER CAR
Used as a
FIVE-SEATED VEHICLE WITH
LUGGAGE COMPARTMENT AT REAR.

ABOVE WITH SEAT FOR 3 ADDED
Both are
FITTED WITH HOOPER'S IMPROVED
EXTENSION OR CAPE CART TOP.

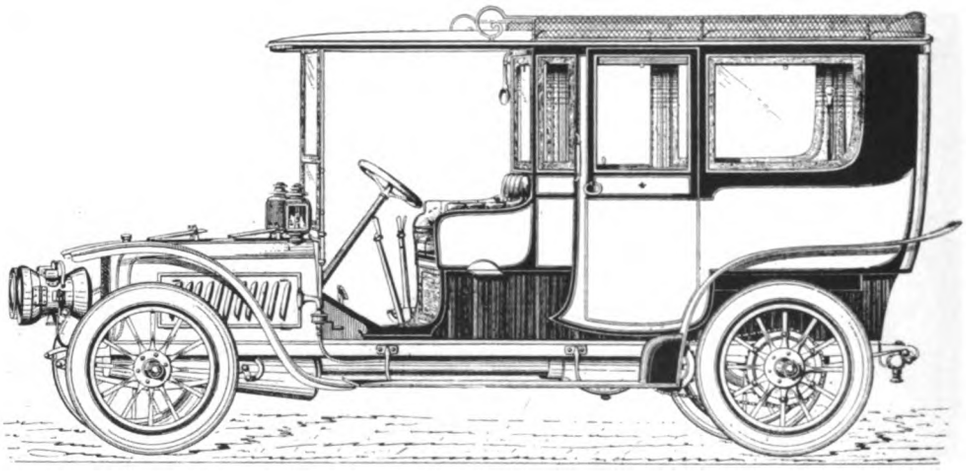


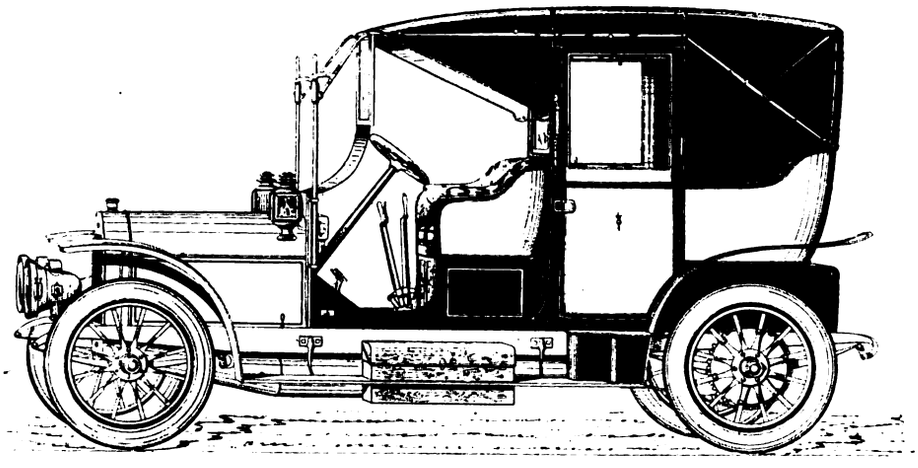
Digitized by Google



LATE NOVELTY WITH GRACEFUL LINES.

STANDARD LINES AND VERY POPULAR.





ENTIRE TOP CLOSES LIKE VICTORIA.

Designs of Automobiles by Prominent French Builders

From Le Guide Du Carrossier.

Digitized by Google

Body Construction and Finish

DESIGN OF UPHOLSTERING FOR AN OPEN MOTOR CAR.

The accompanying drawings illustrate the upholstering of a plain surfaced motor car. It is a style in common use because of its offering no harbor for the location of dust, which is a valuable property in its favor.

Fig. 1 shows the quarters in back and front of body, in plain surface and plain rolled. The cutting out of the material and the stuffing will have to be skillfully done to a clean and finely rounded surface. The roll part of the squabs call for special attention because plain surfaces offer no points of retreat in working up their padded fullness, should any part require working out to a fullness or contracting to a tightness. This trimming is essentially a job for correct and technical cutting out in the material, so that every part of the squabbing may be lined and stuffed to an equal fullness and tightness, from door pillar on the right to door pillar on the left, and in the front, from elbow point to elbow point.

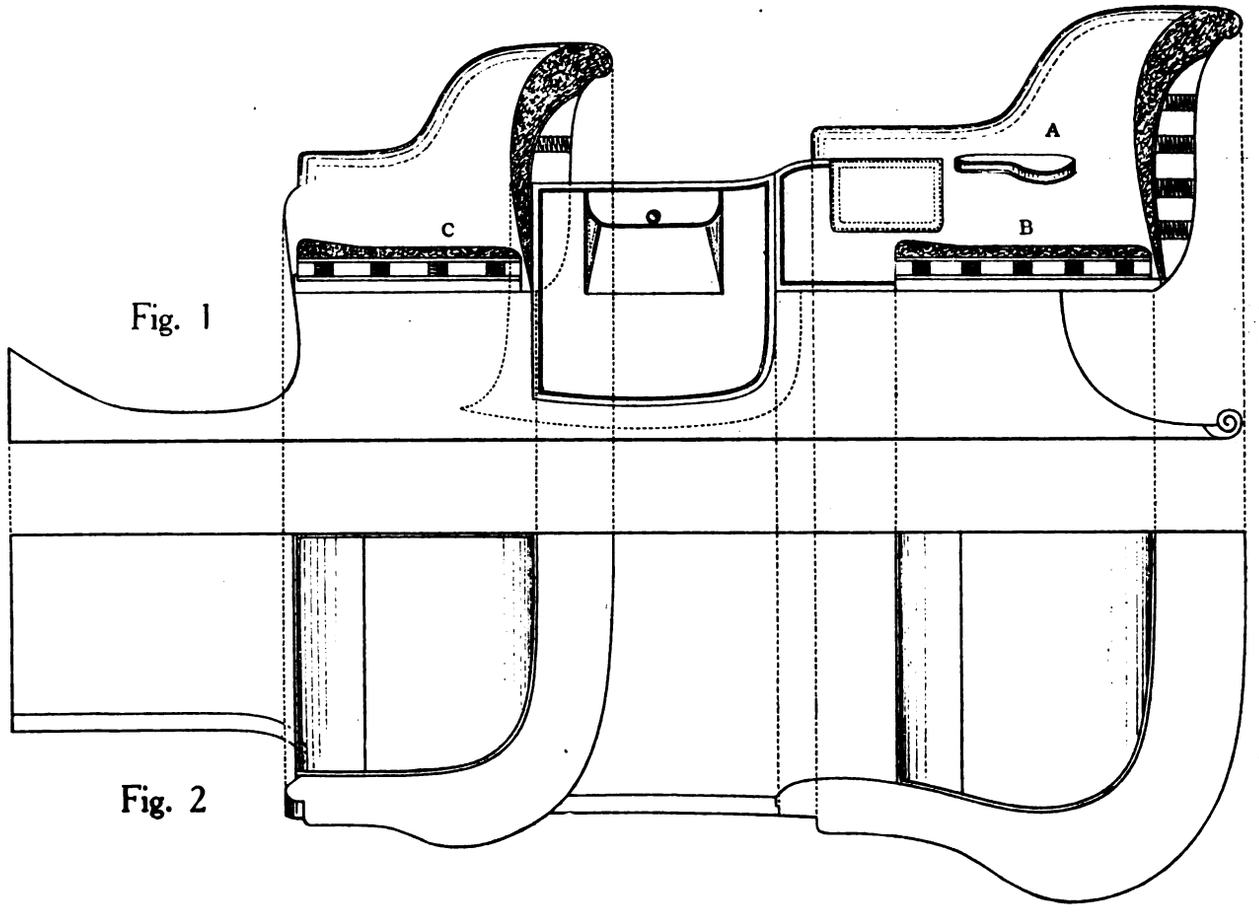
In the front of the hind squab a plain panel pocket is worked, while at A an elbow rest is fitted to the quarter, which is of course nicely trimmed to match. An elbow rest is a most essential adjunct as an accessory fitting of comfort. The back squab is shown in section, disclosing hair stuffing and springs, while at B a section of the hind cushion is also shown, which is made on the same principle as the squab referred to.

The back squab of the front seat is also shown in section, and is made in the same way as the back seat squab, while the make of the seat cushion is explained in the section at C.

The door is made in plain panel surface and edged with welting material, ¾ in. wide, to match. This is made up from the same material as the squabbing. No lace is used. A projecting pocket is fitted to the top of the squab, as explained in the drawing, and a tippet lid is made for the top. These accessory fittings are useful for the secreting of shopping nick-nacks, and other paraphernalia.

Fig. 2 shows the half plan of top of body and the position and form of cushions, which are plain surfaced. They are made with wedge rolls in front, as shown in the sections, Fig. 1.

The design is very plain, but withal, very rich in its sombreness, and from this fact, requires all the more care and expertness on the part of the trimmer to execute the job successfully.



Design of Upholstering for an Open Motor Car.

BRITONS TEST OUT AMERICAN METHODS.

American machinery and machine tools have won their way, the world over, on a basis of intelligently applied systems and standards, so that the man who owns an American machine in the interior of Central Africa can send to the manufacturer for replacement parts and know that they will fit without the aid of a machine shop. Many manufacturers claim to live up to such a high standard, but numbers fall short, and, to show that his firm was in the former class, the British representative of a well-known American car proposed a "standardization test" such as had never been attempted before with any kind of machinery.

Three Cadillacs were selected at random from stock by a committee of the Royal Automobile Club, and, after having been run fifty miles as a preliminary, were totally dismantled. From the three piles, parts were selected at random in the rebuilding

Digitized by Google

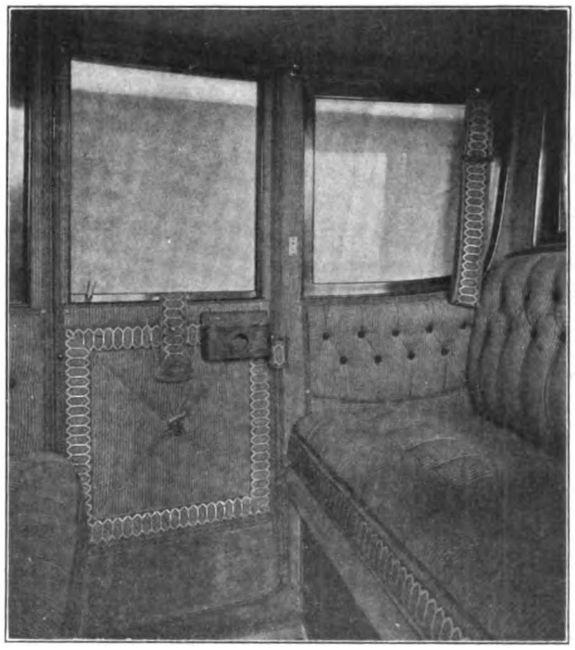
process, and replacements to the extent of about 10 per cent. of the total number were requisitioned and substituted for the originals. The first car was ready to run within 7½ hours after starting, though the facilities for assembling could not be compared to those of a factory.

That each one of the cars successfully emerged from a 500-mile test at top speed immediately after this process of substitution, is one of the most striking evidences of the value of manufacturing on an interchangeable standard basis ever afforded, and speaks louder for American manufacturing methods than any amount of ink and paper possibly could.—Automobile.

INSIDE FINISH OF A MOTOR CAR.

Refinement in the interior finish of closed automobiles is one of the striking developments of the motor car industry within the last two or three years. Automobile manufacturers and carriage builders have been vying in their efforts and the result is shown in interior trims of the greatest luxury and beauty.

A striking example of artistic trimming is shown in the accompanying photograph of the interior of a special four-passenger Franklin coupe. This is finished in striped buff French whipcord with lace to match. The broad lace around the door and the front edge of the seats was especially designed to harmonize with the whipcord cloth. An excellent and quite unique



effect has been produced by lining the roof with the same cloth which is used for the rest of the interior. In the roof is placed an electric dome light.

The curtains are of light brown silk and the carpet of French wilton, all harmonizing in the general buff color scheme. Even the handles are of brownish yellow horn. The windows of this coupe, which are all built to drop, have frames of polished mahogany. The coupe, which was a special order, is very roomy and is one of the handsomest motor cars ever turned out by the Franklin Company.

ONE EFFECT OF ENGLAND'S NEW PATENT LAW.

The new British patent law, which went in operation on January 1, 1908, prescribes new regulations concerning the sale of foreign-made goods in Great Britain protected against competition there by having been patented in the British patent office. Consul-General Richard Guenther sends from Frankfort the following note concerning its effect on German manufacturers:

"A number of leading manufacturing firms in Germany have been informed of the provisions of the new law by the British office. In consequence of this, a large concern near Frankfort-on-the-Main, one of the greatest manufacturers of coal-tar colors and other chemicals (all of which are protected by patent rights) have already taken steps to procure a large tract of land near Ellesmere Port, England, on which they will forthwith have a branch factory built where they will manufacture the principal articles which they sell in Great Britain under protection of patents secured in that country. It is also reported that the great chemical color works at Elberfeld purpose to buy a tract of land in England and erect branch factories upon it so as to be able to hold in future their valuable trade in Great Britain."

REVOLVING POWER HAMMER.

The Deutscher-Niles machinery works, near Berlin, have installed a revolving hammer, the design of Engineer Carl Huber. There are two working arms of the machine, and as the blow is delivered against the anvil the striking head recoils, clears the anvil, and continues to circle until again ready to strike. The machine is operated by a belt, and the design is such that two hammers can work at once, one delivering blows from above and a second from below. There is no question about the speed of the machine; indeed, the main difficulty has been to reduce the rapidity so as to approximate in effect the long, heavy sledge-hammer delivery of hand use. Where two hammers are used no anvil is necessary, and here the machine is seen at its best, for, as is well known, the anvil absorbs power; in other words, the entire energy is converted into forging work.

GRAIN SHOWING IN FINISHED SURFACES.

The question of grain showing in newly, or comparatively new, finished surfaces is acquiring a good old age, but it gives no promise of languishing in an easy chair, as old age loves to do.

The chief contention favors moisture in the wood as the predisposing cause of grain showing, but it seems fair to infer, in view of recent developments and investigation, that causes above the primary coats, and quite independent of them, are responsible for at least the greater share of wood grain shunting its bristles brazenly into the limelight of the finishing coat.

We do not understand the need of any special preparations preceding the application of priming upon a surface that has been made of perfectly cured and dried lumber, thoroughly and skillfully smoothed down and sandpapered.

Practically, there is only one rational way to go about building up a successful system of prevention, and that is to mix up a batch of primer cut with enough turpentine to whip the material into thin, clean working and sufficiently penetrating pigment to seal the pores, stop up somewhat the grain of the wood, and dry bone hard down to the last scrap of paint atoms. This is the critical stage in the surface-building journey, and if it is properly taken care of no resultant ill effects may be apprehended.

Of course, all that princely skill is capable of producing in the priming coat may be, and, in fact, very often is wholly negatived in the process of laying on the roughstuff. The roughstuff itself not infrequently carries the germ of grain upheaval in its composition, which is soft, spongy and porous to a large extent. In this condition it permits and directly encourages the absorption of moisture and such other elements as promote the swelling and shrinking of the wood.

It is on this score that many of the best shops in the country elect to use shop-mixed "'stuff," in which a sufficiency of white keg lead is used to give the mixed "'stuff" a close, intact, fine-grained and impervious surface, against which the microbes of moisture beat unavailingly. Such roughstuff, to be sure, demands and must have an extra allowance of time for drying throughout all its parts, but in working out toward the best results, time, even in this commercial age, is not the most precious commodity.

Roughstuff, in addition to its excellent pigment qualities.

Digitized by Google

should have such a binder of japan and varnish that no fear need be entertained of the necessary quantity of turpentine employed for thinning purposes weakening the strength of these mediums or opening avenues of suction in the pigment.

The inexcusable, and in many cases avoidable, haste with which the priming, lead and roughstuff coats are applied to the surface is responsible for plenty of grain showing which in times past has been charged to wood moisture. All naturally soft pigment coats require a full limit of time to harden safely, and if denied this the outcome is certain to be disastrous to the finish. It were better, on the whole, to crowd the color coats and to use quick-drying coats of rubbing varnish in order to meet the limits of time, rather than attempt to hurry the primary and succeeding surfacing coats. Inside of bodies should also get plenty of lead coats and a robust form of finish. Only in this way can moisture be prevented from penetrating the panels.

MAKING METAL PANELING FOR MOTOR BODIES.

Life-long subscribers to this publication write us for information regarding metal panels for automobile bodies, their communication, together with the reply follows:

Editor of The Hub:—We notice on page 427 of your February issue, in an article entitled "Making Metal Paneling for Motor Bodies," that you say, "Metal paneling is made to template, so that they can be turned out by hand as quick as a machine can stamp or oliver them out, hence they are made to a far greater advantage than putting in wood panels."

We have had some experience with metal panels and are now doing the coppersmith's job of hammering these out and pressing the mouldings in with a pair of rollers. In noting your statement that they can be "stamped or olivered out" we find this is an operation with which we are not familiar. We would appreciate it very much if you would tell us how to oliver metal panels as this may be the solution of the difficult problem that we have been looking for.

We trust this is not asking too much from the editor since we have been life-long subscribers to your magazine and expect to be as long as we are in the business.

Very truly yours,
IRVIN ROBBINS & CO.

Indianapolis, Ind.

In answer to our correspondent, the method of making metal panels by template pressure is, first, to find the developed shape of the panel in the flat. Then the sheeting is cut out to this shape, which when bent round, will conform to the design and formation of the quarter it is for. This is exemplified in getting out the front top circular cornered panel for a mail phaeton body, which all practical body makers are familiar with.

The simplified way to get the shape of the panel in the flat is to make a pattern of floor cloth, or similar material, of the panel to go around the quarter to be paneled, and add to the depth the amount of gather which you estimate the bellying of the panel at the bottom and the tuliping curve of the panel at the top will decrease the depth of the panel to bring it to the size required to fit the quarter framing.

Then the sheeting is taken to an oliver, that is, a template block, which has been made to the exact shape and formation of the quarter the panel is for, and bent to the shape of the block, and finished in the operation with a top tool, which is the exact shape of the bottom tool. Thus the oliver is made in male and female formation, and the exact shape, by pressure, is thus assured.

The metal is so thin that gather, or compression, as well as extension, is crushed out of existence, and the panel comes out the exact shape of the block and of the quarter of the body it is for.

This is a system well understood in exclusive stamping industries, built up to cheapen hand work in tinsmith and zinc plate working. The method does away with drawing the plates with the hammer and working them into shape by hand. But the formations can only be accomplished with standardized work and where great quantities can be turned out to make this expensive process pay.

PATENTS IN BRITAIN MUST NOW BE WORKED THERE TO BECOME EFFECTIVE.

Special Agent Roland R. Dennis, writing from London, tells of the effect of the new law in the United Kingdom concerning patents, under which the article patented must be produced in that country or the patent will be canceled. American and German firms are already arranging to establish factories in Great Britain in order to hold their patents. The United States law does not have such a requirement, though it is a peculiarity of the laws of Germany, France, and other European nations. Mr. Dennis says:

At the 1907 meeting of the National Association of Agricultural Implement and Vehicle Manufacturers the chairman of the committee on tariff devoted a considerable portion of his report to the subject of patents in the different countries of the world. He took up in a comprehensive manner the charges made for issuing a patent and the subsequent fees payable and the other requirements necessary to keep the patent alive. I quote from the report as published:

With nearly every nation, aside from the United States, the burden upon the inventor is exceedingly great, particularly to foreigners not only on account of the excessive taxation, but inability to "work" the patents covering their inventions. Our Government has no requirement other than fees amounting to $35. No taxes are called for, and no "working" required.

On January 1, 1908, the Patent and Designs Act, 1907, went into effect in Great Britain and very greatly altered the position of any foreigner applying for a patent in the United Kingdom. The fees as noted under the new act are as follows, one pound sterling equaling $4.86:

(a) On application for provisional protection..	£1
On filing complete specification.....	3
On sealing (or granting) of the patent....	1
	£5
(b) Further, before the end of four years from date of patent.....	£50
(c) Further, before the end of eight years from date of patent.....	100

Or in lieu of the above fees of £50 and £100 the following annual fees:

Year.	Amount.	Year.	Amount.
Fourth	£10	Ninth	£15
Fifth	10	Tenth	20
Sixth	10	Eleventh	20
Seventh	10	Twelfth	20
Eighth	15	Thirteenth	20

Making the total fees payable during the life of the patent—fourteen years—to be £155 ($754.30).

Provisions of the New Law.

Paragraph 2 of the law provides as follows:

(1) A provisional specification must describe the nature of the invention.

(2) A complete specification must particularly describe and ascertain the nature of the invention and the manner in which the same is to be performed.

(3) In the case of any provisional or complete specification where the comptroller deems it desirable he may require that suitable drawings shall be supplied with the specification, or at any time before the acceptance of the same, and such drawings shall be deemed to form part of the said specification.

Paragraph 9 reads:

On the acceptance of the complete specification the comptroller shall advertise the acceptance, and the application and specifications, with the drawings (if any), shall be open to public inspection.

Paragraph 11 reads:

Any person may at any time within two months from the date of the advertisement of the acceptance of a complete specification give notice at the patent office of opposition to the grant of the patent on any of the following grounds:

(a) That the applicant obtained the invention from him, or from a person of whom he is the legal representative; or

(b) That the invention has been claimed in any complete specification for a British patent which is or will be of prior date

Digitized by Google

to the patent the grant of which is opposed, other than a specification deposited pursuant to an application made more than fifty years before the date of the application for such last-mentioned patent; or

(c) That the nature of the invention or the manner in which it is to be performed is not sufficiently or fairly described and ascertained in the complete specification; or

(d) That the complete sepcification describes or claims an invention other than that described in the provisional specification, and that such other invention forms the subject of an application made by the opponent in the interval between the leaving of the provisional specification and the leaving of the complete specification, but on no other ground.

(2) Where such notice is given the comptroller shall give notice of the opposition to the applicant, and shall, on the expiration of those two months, after hearing the applicant and opponent, if desirous of being heard, decide on the case.

Paragraph 17 reads:

(1)The term limited in every patent for the duration thereof shall, save as otherwise expressly provided by this act, be fourteen years from its date.

(2) A patent shall, notwithstanding anything herein or in this act, cease if the patentee fails to pay the prescribed fees within the prescribed times; provided that the comptroller, upon the application of the patentee, shall, on receipt of such additional fee, not exceeding £10, as may be prescribed, enlarge the time to such an extent as may be applied for, but not exceeding three months.

A Provision Very Objectionable to Foreigners.

Paragraph 27 is the one most objectionable to the foreigner and one that virtually prevents the patenting of small improvements on any foreign-made machines now being sold in the United Kingdom. I give this paragraph in full:

27. (1) At any time not less than four years after the date of a patent and not less than one year after the passing of this act, any person may apply to the comptroller for the revocation of the patent on the ground that the patented article or process is manufactured or carried on exclusively or mainly outside the United Kingdom.

(2) The comptroller shall consider the application, and if after inquiry he is satisfied that the allegations contained therein are correct, then, subject to the provisions of this section, and unless the patentee proves that the patented article or process is manufactured or carried on to an adequate extent in the United Kingdom, or gives satisfactory reasons why the article or process is not so manufacturerd or carried on, the comptroller may make an order revoking the patent either—

(a) Forthwith; or

(b) After such reasonable interval as may be specified in the order, unless in the meantime it is shown to his satisfaction that the patented article or process is manufactured or carried on within the United Kingdom to an adequate extent.

Provided, That no such order shall be made which is at variance with any treaty, convention, arrangement or engagement with any foreign country or British possession.

(3) If within the time limited in the order the patented article or process is not manufactured or carried on within the United Kingdom to an adequate extent, but the patentee gives satisfactory reasons why it is not so manufactured or carried on, the comptroller may extend the period mentioned in the previous order for such period not exceeding twelve months as may be specified in the subsequent order.

(4) Any decision of the comptroller under this section shall be subject to appeal to the court, and on any such appeal the law officer or such other counsel as he may appoint shall be entitled to appear and be heard.

How the Newspapers Regard the Law.

The supposed beneficial results of the new act are being heralded by the press in all parts of the Kingdom. I make the following extract from the Dublin Sunday Chronicle as characteristic of the tone taken by the press:

On the first day of this year a new act came into force in this country, one that within a month has brought the business instinct of the nation to a sharp understanding of the value of possessing a keen commercial brain at the head of the Board of Trade. The new patents act in a month's time has found additional work for nearly 2,000 people, and before the end of 1908 it is estimated that quite 10,000 British workmen will be employed as a direct consequence of this particular piece of legislation.

It is something like fifteen years since this question of the compulsory working of all patents granted in this country within our own shores was first brought before the Manchester Chamber of Commerce.

At every annual meeting of the Associated Chambers of Commerce from 1901 to 1905 a resolution was moved on this subject. Finally a powerful deputation waited upon Mr. Lloyd-George. They introduced the subject and succeeded in so impressing the president of the Board of Trade that he at once formed a small committee, and finally he carried through the admirable act of last August. It is a definitely and clearly worded act, and there is no escaping from it. Every patent granted in the British Isles will have to be worked in the British Isles. Further, the act is retroactive, and all patents taken out in 1904 and before that date will by the 28th of August this year be compelled to show cause why they should not be made to work their manufactures in this country. We have granted something like 8,000 patents to foreigners. Many of these are not worth much, but a large number are very valuable.

It is rumored that a large American machinery firm is now here looking for suitable land for the purpose of manufacturing all the tools for which they have British patents. Another American firm holding British patents for safety razors will in a few months be finding work for 500 hands at Sheffield. Another company has bought land in London, and all this in four weeks' time. One can already compute that 10,000 additional work people will be directly employed twelve months hence as a result of the amended patents act.

But we shall never hear of a great number, since, when it is not considered essential to erect works of their own, the right to manufacture will have to be delegated by foreigners to British firms. Finally when all these patents lapse we shall have definitely established concerns here ready to continue the industries. Fortunately, the new act, unlike its preceding ones, is so definitely and clearly worded—especially is this the case with section 27, which deals with the revocation of patents worked outside the United Kingdom—that there are no loopholes to afford escape from it. The industries about to be created will become British industries.

RECENT DEVELOPMENT OF THE MOTOR PATROL WAGON.

Illustrated on page 31.

In a recent interview the superintendent of police in a large Western city, which has adopted the Rapid Motor Vehicle Company's automobile patrol wagon, said of this form of vehicle:

"It has the old horse-drawn wagon simply backed off the boards. It can get under way faster, it can reach its destination quicker, and you don't have to worry about slippery pavements when answering a riot call. As an aditional factor to the protection of life and property its use is inestimable, because, as I said before, in the case of a riot we can reach the disturbance with a squad of reserves and clean things up before much damage is done."

The Rapid people have placed their patrol wagon with several police departments in the larger cities and it is giving universal satisfaction. By actual tests, these wagons have proven cheaper to operate, capable of quicker speed, able to make more trips a day, and easier to handle in emergencies, than the old-style horse-drawn wagons.

Rapid police patrols have been operated successfully in New York City and Indianapolis, and are being taken up by the large cities very rapidly.

METERS FOR HORSE-DRAWN VEHICLES.

Recently the New York papers published a pathetic story of how a cab driver, driven to desperation by the inroads made on his vocation by the taxicabs, committed suicide.

The chief reason for the success of the taxicab has been the meter, which eliminates all possible controversy. The meter has for many years been used on horse-drawn vehicles in European cities, particularly Berlin and Vienna.

Since the success of the taxicabs in New York many of the electric cabs have also been equipped with meters. There is no question but that the meter will eventually supplant the old system on account of the elimination of bargaining before embarking and wrangling when the trip is completed, and if the owners of horse-drawn vehicles don't want to be driven from the streets they will give this subject serious consideration.

There is a good field open to the manufacturers of meters in the introduction of their system on horse-drawn vehicles.

Digitized by Google

B. F. GOODRICH COMPANY IN NEW OFFICE BUILDING.

The recently completed office building of the B. F. Goodrich Company, Akron, Ohio, marks another step forward in the growth and development of this great rubber manufacturing plant. The building is an imposing five-story structure 50 ft. by 100 ft., and of the modern office building type, with large glass areas on all sides. The exterior construction shows walls of repressed brick capped with Indiana limestone.

The floors, partitions and roof are fireproof, and made in accordance with the Kahn system of reinforced concrete construction. The first, third, fourth and fifth stories show cement floors and selected birch woodwork, while the second story, containing the executive offices, is of quartered oak finish and marbolithic floors.

The directors' room, extending across the entire front of the second floor, is a particularly spacious chamber, with lofty ceiling in ornamental relief and sides paneled in oak with Alps green marble base. The light fixtures are of antique silver finish, making a pleasing contrast with the rich brown tone of the paneled oak.



B. F. Goodrich Co.'s New Office Building at Akron, Ohio.

The building is equipped with an electric elevator, lighted by electricity, largely from pendant fixtures of brushed brass, heated by direct steam, with every room provided with thermostatic apparatus for regulating the heat. Steel vaults are provided on the second, third and fourth floors for the safe keeping of all valuable papers and records. Marble lavatories and toilet rooms are found on each floor; in fact, every modern convenience and fixture that adds to the making of a complete up-to-date office building has been supplied.

E. C. Shaw, general manager of the company, says that the Goodrich Company at present are employing almost as many men as they have at any time in recent years. He says they have added nearly 300 employes to their force since December, which is significant these days, when competition is so keen and there are so many concerns engaged in the manufacture of rubber tires and other rubber goods.

TIRE INFRINGEMENT SUIT.

A suit in equity was filed March 5, 1908, in the United States Circuit Court at Hartford, Conn., against the Hartford Rubber Works Company by the Metallic Rubber Tire Company, of Jersey City, N. J., alleging infringement of United States patent No. 609,320, which relates to the principle of a metal-studded leather tread for rubber tires. The Metallic Rubber Tire Company was incorporated in New Jersey March 14, 1899, and early in 1906 issued a circular stating that their counsel had been directed to bring suit against users of a number of non-skidding tires, claiming infringement of patents granted to Calvin Thayer Adams and others, dating back to 1898. The Metallic Rubber Tire Company at one time exhibited their goods extensively at the bicycle and motor shows, but do not appear to have been active of late.

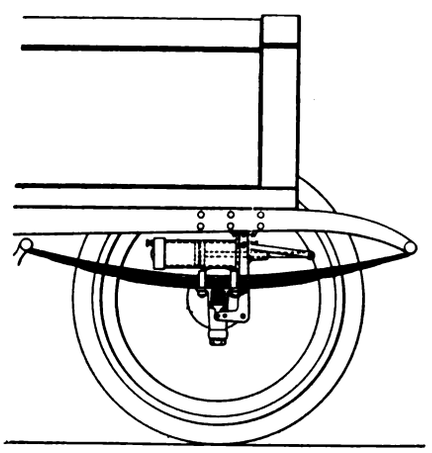
BEING SUED FOR USING THE MOTZ TIRE.

The Swinehart Clincher Tire and Rubber Company have begun a suit in the United States district court against Frank F. Tillotsen, cashier of the Citizens' Savings Bank of Detroit. Tillotsen is charged with using a tire made by the Motz company, which infringes upon the Swinehart concave patents.

ANTI-VIBRATION DEVICE FOR AUTOMOBILES.

This device, patent for which has recently been granted to Charles C. Dodge, of Newark, N. J., who has made assignment to the Dodge Lubricator Co., Boston, Mass., is intended to reduce the vibration and jar of the car body, and it is generally the practice at this time to employ not only springs located between the car body and the axles, but also to employ pneumatic tires on the wheels. Attempts have been made to utilize solid rubber tires so as to avoid the danger and expense of punctures, but the solid rubber is not sufficiently elastic to prevent vibration of the car body when the vehicle is passing over a rough road.

It is the purpose of the present invention to provide mechanism which may be interposed between the relatively movable parts of a car such as the axle and the car body, for limiting or retarding the action of the vehicle springs while permitting them



to yield sufficiently to compensate for inequalities in the road so as to reduce the vibration of the car body and also permit of the employment of solid rubber tires, with their corresponding advantages.

The device itself comprises a piston and cylinder of which one may be connected to the car body and the other to the axle so that when the car body and the axle move relatively to each other, the piston is moved in one direction or the other to compress air in the cylinder and retard the action or destroy the synchronism of the spring and prevent the vibration of the car body.

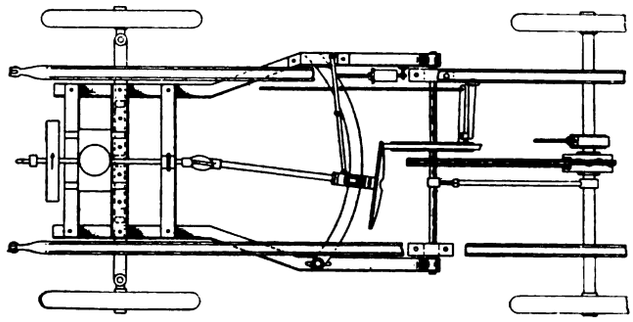
Digitized by Google

AUTOMOBILE RUNNING GEAR.

The present invention has reference to motor car running gears, and it aims, primarily, to provide a device of that nature which is yieldingly supported in such a manner as to completely absorb all vibrations of the engine during the time that the same is in operation.

To this end, the invention comprises a supplemental frame pivoted at its rear end to the counter shaft of the car and yieldingly supported at its front end upon an elliptic spring pivoted thereto and to the front axle.

The auxiliary frame which forms the subject of the present case comprises a pair of angle-iron side bars and a series of three



cross pieces, as shown, which connect said bars at their forward ends. The auxiliary frame is disposed below the plane of the regular frame and diverges intermediate their ends from each other, the front portions of said bars being located between the bars of the regular frame and the rear portions exterior thereof, the last mentioned portions being provided with aligning openings through which the projecting ends of the counter shaft extend, said shaft thus serving as a pivot upon which the frame swings.

The patentee of this invention is Charles C. Keyser, of Washington, D. C., the patent being granted March 10, 1908.

KNOX AUTOMOBILE CO. REORGANIZES.

The Knox Automobile Company, Springfield, Mass., which assigned in July last with $975,000 assets and $531,000 liabilities, has been reorganized. The assignee was Alfred N. Mayo, the treasurer of The Fisk Rubber Company, to whose good management the rehabilitation of the company is credited. The assignee issued $500,000 in preferred stock, which was accepted by the creditors in full satisfaction of their claims.

ATTRACTION AT AUTOMOBILE CARNIVAL.

A novel application of gas explosions in the shape of an oxy-hydrogen gun of twelve barrels was used by the New York Transportation Company to call attention to its taximeter motor cabs and other public motor vehicles in the parade at the Automobile Carnival recently held in New York City. The gun consisted of twelve pieces of different sized gas pipe, open at one end, with an automobile sparking plug in the other. A small bore tube admitted oxygen and hydrogen gas from a mixing valve in the proper proportions to make a sharp explosion. When the pipe was full of gas the spark was set off and an explosion resulted. The smaller tubes gave a peculiar whistling explosion, while the larger pipes made a loud noise. The New York Transportation Company, in its taximeter section, also had a specially designed confetti gun, worked by compressed air, installed on one of its huge Fifth Avenue De Dion gasoline stages. As the confetti was shot up into the air, the rays from a 500,000 candle-power searchlight were thrown on the flying particles and gave the effect of a fountain of colored fire. In this way the New York Transportation Company marked the fact that it was the first in the world to use public motor cabs, and the first in the United States to use public gasoline cabs, taximeter cabs and motor stages.

RUBBER TRADE DIRECTORY.

In view of the many inquiries from time to time for a directory of the rubber trade of the United States, the publishers of The India Rubber World, 395 Broadway, New York, decided to undertake the publication of such a book, which has just made its appearance.

Besides publishing a list of rubber manufacturers and of the principal distributors of rubber goods, other information is presented which seems proper for a trade reference book. It contains a list of trade works in use in connection with rubber goods, a feature which has been compiled in response to numerous requests for such information. The use of trade marks and trade brands is becoming more and more general and a feature of increasing importance in business. This directory embodies in its pages a list of such registered names with names of firms using them.

Finally, the book contains chapters on trade-mark law, for the benefit of persons seeking to have trade marks registered, and on the laws in the several States regulating the status in them of corporations under the laws of other States.

The book contains about two hundred and seventy pages, is well printed, and bound in stiff covers.

Wants

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, 5 cents a word. Initials and figures count as words. Minimum price, 30 cents for each advertisement.

HELP WANTED.

Wanted—Manager. A first-class man with exceptional record, both in manufacturing and marketing vehicles can secure good position. Communications confidential. Address F. A. Ames, Owensboro, Ky.

Wanted—Salesman in vehicle and implement trade to handle side line of buggy tops, etc. Liberal commission paid. Write at once to Bauer Bros. Mfg. Co., Cincinnati, Ohio.

SITUATIONS WANTED.

Wanted—Position as buyer or superintendent of carriage factory. Eighteen years' experience in largest factories. Address Box 24, care The Hub, 24 Murray St., New York City .

Wanted—Position by an experienced foreman blacksmith, on medium or good grade work. Organizer; honest, reliable. Wishes permanent position with a good manufacturer. References A1. Address Box 180, care The Hub, 24 Murray St., New York City.

Wanted—Situation as blacksmith foreman in large factory. Has had fifteen years' experience as foreman in large factories and has all the latest methods of getting out the work. Can come well recommended. Address "Smith Foreman," care The Hub, 24 Murray St., New York City.

Wanted—Carriage wood worker would like a working interest in a good going carriage factory as foreman or superintendent. Good on light and heavy work; also auto work. Can also draft. Address Box 44, care The Hub, 24 Murray St., New York City.

Wanted—Foreman painter desires to make change. Young man, eight years as foreman. Prefer high-grade factory work. Address Box 45, care The Hub, 24 Murray St., New York City.

Wanted—A position as body finisher in first-class shop. Am all-around body painter. Can furnish the best of references. Eleven years in one place. Address "W. K. M.," care The Hub, 24 Murray St., New York City.

Wanted—Position as assistant draftsman with carriage or automobile concern, by practical and capable young man, aged twenty-three. Will begin with small salary. Address "N. R.," care The Hub, 24 Murray St., New York City.

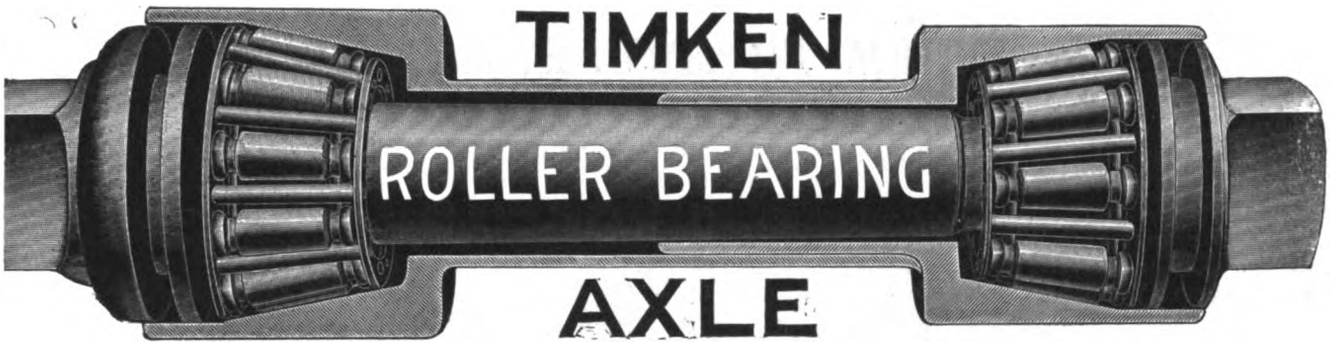
MISCELLANEOUS.

Wanted—We are in the market at all times for fuel hardwood in lengths of 24 in., 30 in., and 36 in. Must be dry. Address Alwart Bros. Coal Co., 165 Webster Ave., Chicago, Ill.

PATENTS.

Patents—H. W. T. Jenner, patent attorney and mechanical expert, 607 F Street, Washington, D. C. Established 1883. I make an examination free of charge and report if a patent can be had, and exactly how much it will cost. Send for circular.

Digitized by Google



THE EVIDENCE

showing an increased earning power of $400.00 a year on a two horse truck by being equipped with

TIMKEN ROLLER BEARING AXLES

CLEVELAND, OHIO, February 10, 1908.

Gentlemen:—Replying to your recent request through your Mr. Staley as to our experience with your bearings, we take pleasure in saying that they have entirely surpassed our expectations, doing even more than you said they would.

Our records show that horses drawing wagons equipped with your bearings cannot only make more trips per day, handle more tonnage, thereby increasing our earnings, but keep in better condition than those drawing wagons with ordinary axles.

During 1907 a two-horse truck equipped with Timken Roller Bearings made 1,565 trips, traveled 6,260 miles, and carried 15,650,000 pounds.

In 1906 the same wagon, with ordinary axles, made 1,252 trips, traveled 5,008 miles, and carried 10,016,000 pounds.

And thus the earnings of this one team increased over $400.00 during the year 1907. During this period the bearings have been greased twice, and all this accomplished without one cent of expenditure for repairs.

From the above you can draw your own conclusion why we are replacing all of our old axles with anti-friction bearings.

Yours truly,
GENERAL CARTAGE & STORAGE CO.,
A. H. Greeley, Gen. Mgr.

What does this tell you? Would it not pay you to have your customers enjoy such profits? If you want more facts, write us.

The Timken Roller Bearing Axle Co.

CANTON, OHIO

BRANCHES:

10 East 31st Street, New York **429 Wabash Avenue, Chicago**

Digitized by Google

INDEX TO ADVERTISERS.

A

Akron-Selle Gear Co. 25
American Roller Bearing Fifth Wheel Co. 18
Armleder Co., O., The 22
Auxiliary Spring and Ventilating Button Co. 19

B

Barnes & Co., W. F. & John 18
Beckwith & Chandler Co. 2
Bimel-Ashcroft Mfg. Co. ..... 3d cover
Bradley & Son, C. C. 26

C

Central Bureau of Engraving 25
Columbus Bolt Works ..... 4th cover
Consolidated Rubber Tire Co. 2
Cortland Forging Co. 24
Crane & MacMahon ..... 2d cover
Crandal, Stone & Co. 5

D

Dalzell Axle Co. 21
Defiance Machine Works 17
Devoe, F. W., & Raynolds Co., C. T. ..... 3d cover
Dust-Proof Axle and Wheel Co. 23

E

Eagle White Lead Co. 20
Eccles Co., Richard 19
English & Mersick Co., The 18
Enterprise Brass & Plating Co. 24

F

Fitch Gear Co. 22
Flexible Shaft and Tool Co. 6
Fort Pitt Novelty Co., The 4

G

Gerhab, Jacob 22
Gifford & Son, John A. 26
Goodrich Co., B. F., The 25
Goodyear Tire and Rubber Co. 4

H

Hankinson, J. V. 18
Harland & Son, Wm. 1
Hoopes Bro. & Darlington, Inc. ..... 2d cover

J

Jamesville Mfg. Co. 24
Jones & Co., Phineas 15

K

Kalamazoo Tire Setter Co. 25
Keystone Forging Co. 21
Kokomo Rubber Co. ..... 4th cover

L

Landsman Motor Co. 25
Landers Bros. Co. 15

M

Masury & Son, John W. 2
Maxwell & Fitch Co. ..... —
McKinnon Dash Co. ..... 4th cover
Miller Bros. 26

N

National Safety Fifth Wheel Co. 15
National Spring and Wire Co. 25

O

Ohio Seat Co. 26

P

Palm, Fechteler & Co. 1
Peerless Buggy Top Co. 23
Pierce Co., F. O. 3
Pomeroy & Fischer 3
Porter, H. K. 26

R

Rochester Wheel Co. 22
Russell, Burdsall & Ward Bolt and Nut Co. 22

S

Schubert Gear Co., August ..... —
Schubert Bros. Gear Co. 24
Schacht Mfg. Co. 18
Sheldon Axle Co. 21
Smith & Co., Edw. 4
Sparks-Withington Co. 21
Spring Perch Co. 21
Standard Ball Axle Co. 15
Standard Oil Cloth Co. 5
Standard Leather Co. 23
Stein Double Cushion Tire Co. 5
Studebaker Bros. Mfg. Co. 6

T

Timken Roller Bearing Axle Co. 13

V

Valentine & Company 4

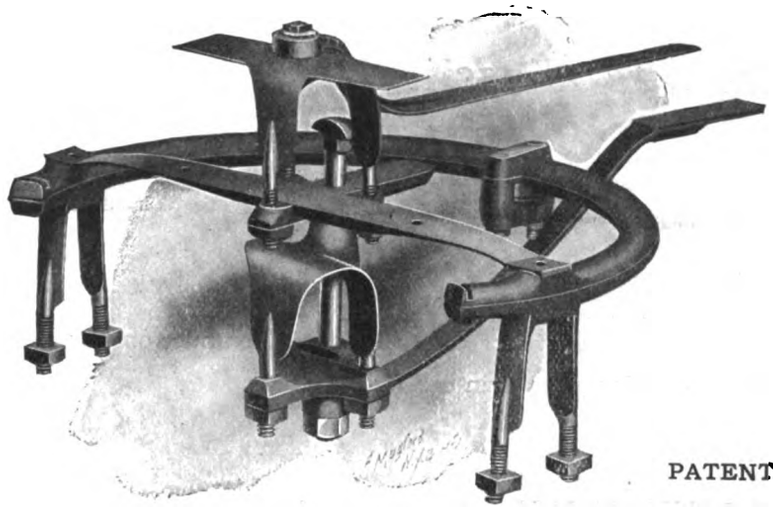
W

West Tire Setter Co. 6
Wiese & Co., Wm. 26
White, H. F. 2
Wilcox Mfg. Co., D. 15
Willey Co., C. A. ..... 2d cover
Woodman, Joel H. 15

Z

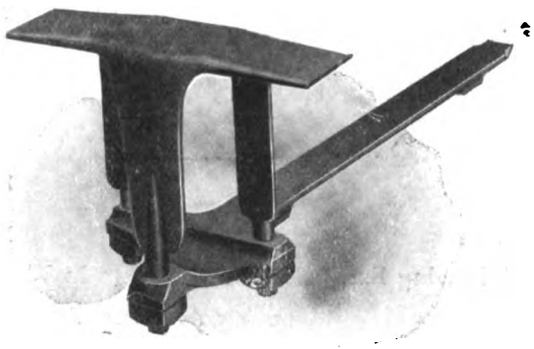
Zwick & Greenwald Co., The ..... 3d cover

Digitized by Google



No. 1902. Single Reach.

PATENTED.



No. 35½ and 41¾. Perch Heel.

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MFG. CO.

MECHANICSBURG, PA.

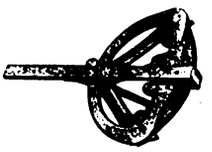
IT DOES THE TRICK R. F. D. SPECIAL



This axle runs easier than any other, and requires no attention. IT'S A WONDER Ask why. We can prove it.

STANDARD BALL AXLE WORKS, Lancaster, Pa.

National Safety
Short-Turning Fifth Wheels
Are Giving Universal Satisfaction.
Ask Your Dealer for Them.
National Safety Fifth Wheel Co., Lancaster, Pa.

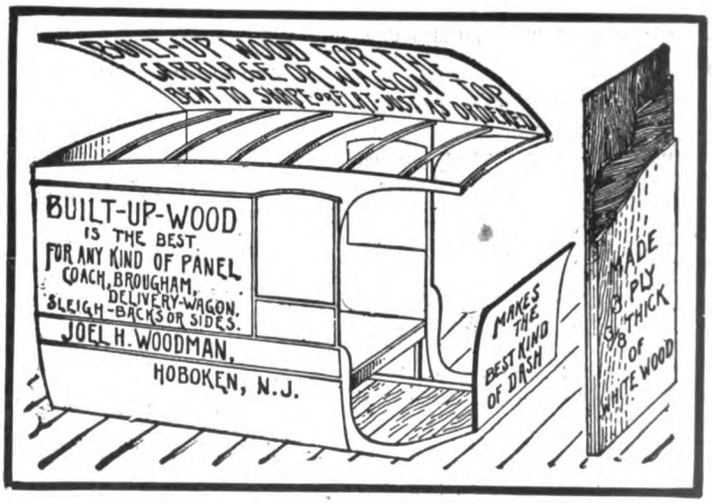


Style C.

Jones Wheels
BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.



LOWEST PRICES. *PROMPT SHIPMENTS.* *SUPERIOR QUALITY.*

TOLEDO **LANDERS BROTHERS CO.** **BOSTON**

We Are the Pioneers in the

SHEETINGS 32 Grades Single Double Three-Ply **BUCKRAM** Four-Ply and Canvas Lined **DUCKS**

WEBBING **LINE** **WADDING**

Celluloid Sheets, Enameled Muslins, Drills and Ducks

SCRIM. *RATTAN MOULDING.* *BATTS.* *OILED DUCK.* *OIL CARPET.*

Please mention "The Hub" when you write.

Digitized by Google

Advertisements Classified.

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

AXLES, ETC.

Dalzell Axle Co., South Egremont, Mass.

Dust Proof Axle and Wheel Co., Logansport, Ind.

Sheldon Axle Co., Wilkes-Barre, Pa.

Standard Ball Bearing Axle Co., Lancaster, Pa.

Sparks-Withington Co., The, Jackson, Mich.

Timken Roller Bearing Axle Co., Canton, Ohio.

BODIES, SEATS, ETC.

Woodman, Joel H., Hoboken, N. J.

BODIES IN THE WHITE.

Miller Bros., Amesbury, Mass.

Schubert Bros. Gear Co., Oneida, N. Y.

Schubert Gear Co., August, Oneida, N. Y.

Union City Body Co., Union City, Ind.

BOLTS AND NUTS.

Columbus Bolt Works, Columbus, O.

Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

CARRIAGE CLOTHS.

Wiese & Co., Wm., New York City.

CARRIAGE FORGINGS.

Cortland Forging Co., Cortland, N. Y.

Eccles Co., Richard, Auburn, N. Y.

Keystone Forging Co., Northumberland, Pa.

CARRIAGE HARDWARE.

Gifford & Son, John A., New York City.

CARRIAGE GOODS.

Crandal, Stone & Co., Binghamton, N. Y.

English & Mersick Co., New Haven, Conn.

Enterprise Brass and Plating Co., Cincinnati, Ohio.

Gifford & Son, John A., New York City.

Wiese & Co., Wm., New York.

DASHES, FENDERS, RAILS, ETC.

McKinnon Dash Co., Buffalo, N. Y.

ENGRAVING.

Central Bureau of Engraving, New York City.

FIFTH WHEELS.

American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.

National Safety Fifth Wheel Co., Lancaster, Pa.

Wilcox Mfg. Co., D., Mechanicsburg, Pa.

FINISHED VEHICLES.

Armleder Co., O., Cincinnati, O.

Parry Mfg. Co., Indianapolis, Ind.

Schacht Mfg. Co., The, Cincinnati.

Studebaker Bros. Mfg. Co., South Bend, Ind.

JACKS.

Hankinson, J. V., Franklin, O.

LAMPS.

Gifford & Son, John A., New York City.

Stevens & Sackett Co., New Haven, Conn.

LEATHER, PATENT AND ENAMELED (Artificial Included).

Standard Leather Co., Allegheny, Pa.

MACHINERY AND TOOLS.

Barnes Co., W. F. & John, Rockford, Ill.

Defiance Machine Works, Defiance, Ohio.

Kalamazoo Tire Setter Co., Kalamazoo, Mich.

Maxwell & Fitch Co., The, Rome, N. Y.

Porter, H. K., Everett, Mass.

West Tire Setter Co., Rochester, N. Y.

MISCELLANEOUS.

Landers Bros Co., Toledo, Ohio, and Boston, Mass.

Standard Oil Cloth Co., New York.

MOTORS, AUTO PARTS, ETC.

"High Wheel" Auto Parts Co., Muncie, Ind.

Westinghouse Electric & Mfg. Co., Pittsburg, Pa.

ORNAMENTS.

Palm, Fechteler & Co., New York.

PASTE FOR TRIMMERS.

Buckeye Paste Co., Columbus, O.

RUBBER TIRES.

Consolidated Rubber Tire Co., New York City.

Goodrich Co., B. F., Akron, Ohio.

Goodyear Tire and Rubber Co., Akron, O.

Kokomo Rubber Co., Kokomo, Ind.

Stein Double Cushion Tire Co., Akron, O.

SHAFT COUPLINGS AND ANTI-RATTLERS.

Bradley & Son, C. C., Syracuse, N. Y.

Eccles Co., Richard, Auburn, N. Y.

Fort Pitt Novelty Co., Ambridge, Pa.

Metal Stamping Co., New York.

Spitzli Mfg. Co., Utica, N. Y.

SPOKES.

Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.

SPRINGS AND GEARS.

Akron-Selle Gear Co., Akron, Ohio.

Auxiliary Spring and Ventilating Button Co., Detroit, Mich.

Fitch Gear Co., Rome, N. Y.

National Spring and Wire Co., Albion, Mich.

Schubert Gear Co., August, Oneida, N. Y.

Schubert Bros. Gear Co., Oneida, N. Y.

Spring Perch Co., Bridgeport, Conn.

STRAPS.

Decker, J. C., Montgomery, Pa.

TOPS.

Peerless Buggy Top Co., Cincinnati, Ohio.

TRIMMING MATERIALS.

Stevens & Sackett Co., New Haven, Conn.

VARNISHES, PAINTS AND JAPANS.

Beckwith-Chandler Co., Newark, N. J.

Devoe, F. W., and C. T. Raynolds Co., New York City.

Harland & Son, Wm., London and New York.

Masury & Son, John W., New York and Chicago.

Parrott Varnish Co., Bridgeport, Conn.

Pierce Co., F. O., New York City.

Pomeroy & Fischer, New York City.

Smith & Co., Edw., New York City.

Standard Varnish Works, New York.

Valentine & Company, New York, Chicago, Boston, Paris.

Willey Co., C. A., Hunter's Point, New York City.

WHITE LEAD.

Eagle White Lead Co., Cincinnati, Ohio.

WHEELS.

Crane & MacMahon, New York.

Eberly & Orris Mfg. Co., Mechanicsburg, Pa.

Gifford & Son, John A., New York City.

Hoopes Bro. & Darlington, West Chester, Pa.

Jamesville Mfg. Co., Jamesville, N. Y.

Jones & Co., Phineas, Newark, N. J.

Rochester Wheel Co., Brockport, N. Y.

Zwick & Greenwald Wheel Co., Dayton, Ohio.

WHEEL STOCK, BENT WOOD, ETC.

Crane & MacMahon, New York.

Please mention "The Hub" when you write.

Digitized by Google

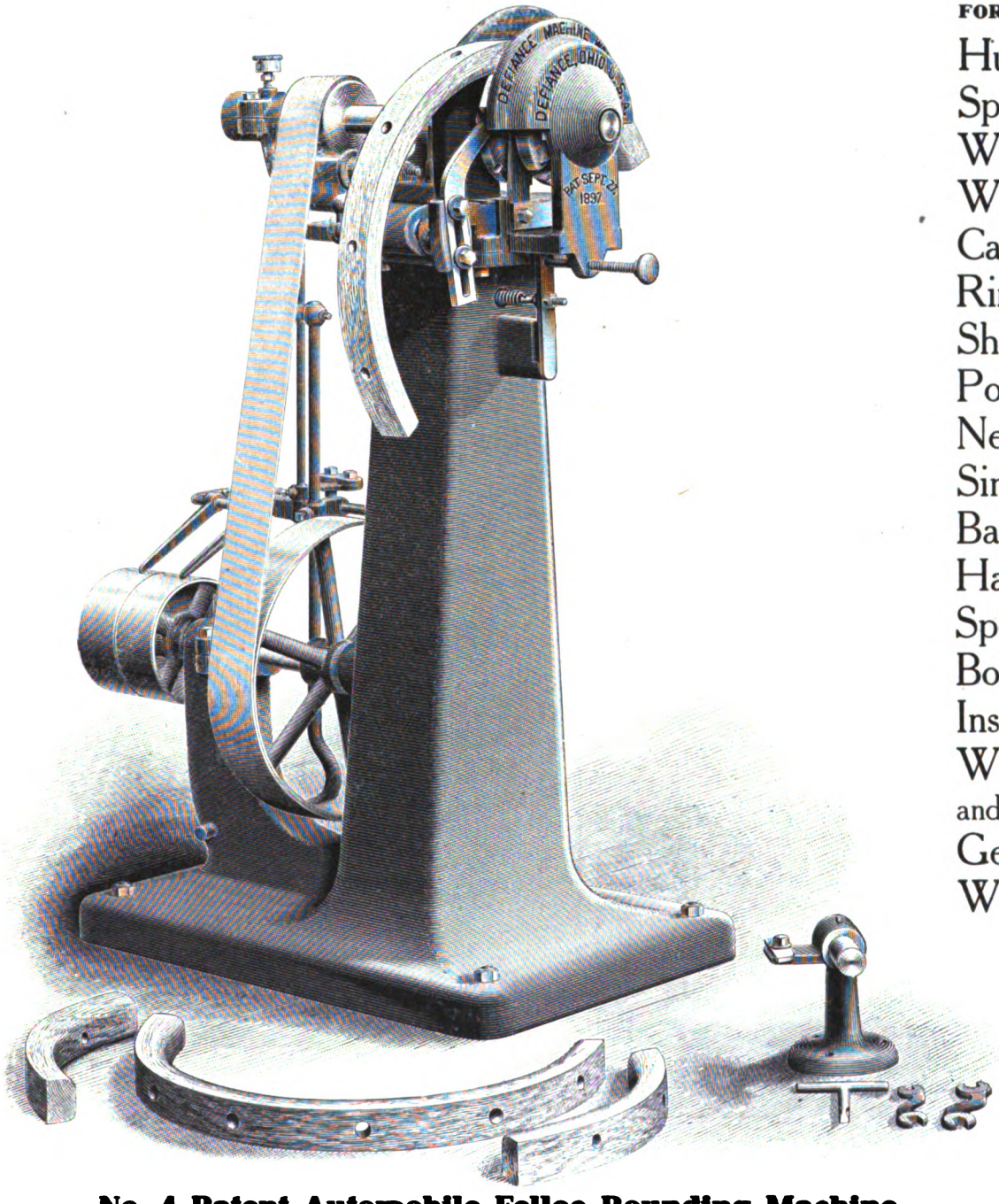
ESTABLISHED 1850

The Defiance Machine Works

INVENTORS AND BUILDERS OF

Patent Wood-Working Machinery

DEFIANCE, OHIO



FOR MAKING

Hubs
Spokes
Wheels
Wagons
Carriages
Rims
Shafts
Poles
Neck-Yokes
Single Trees
Barrel Hoops
Handles
Spools
Bobbins
Insulator Pins
Wood Dishes
and for
General
Wood-Work

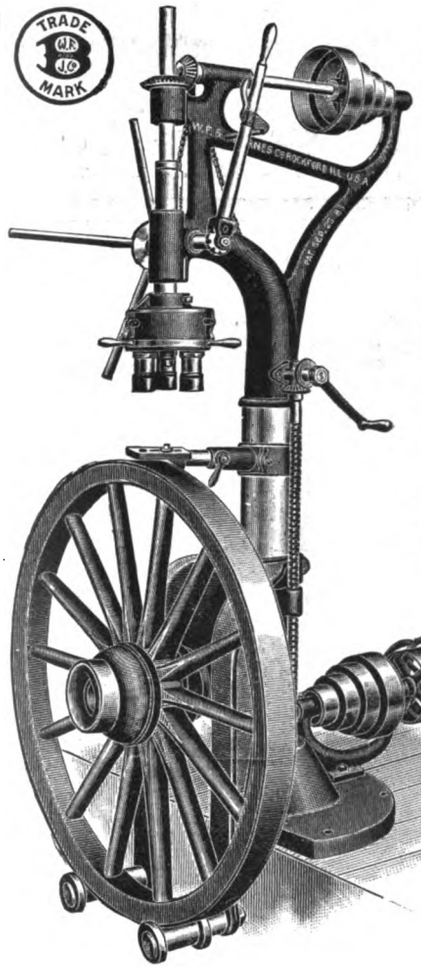
Complete Equipments

Send for Catalogue

No. 4 Patent Automobile Felloe Rounding Machine

Please mention "The Hub" when you write.

Digitized by Google



A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.

The Invincible Schacht

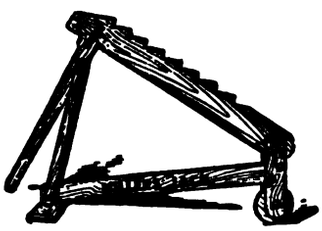
A WONDER IN A HUNDRED WAYS



MODEL K.

The simplest, most practical, efficient and economical car ever built. Twelve h.p., Friction Drive. Any speed up to thirty miles per hour. All parts interchangeable and thoroughly "getatable." Large wheels with cushion tires overcome all tire troubles. Almost noiseless and rides like a pneumatic. The greatest selling proposition on the market. Live agents wanted everywhere. Prompt deliveries and thorough satisfaction guaranteed. Send at once for catalogue, etc., and be convinced.

The SCHACHT MFG. CO., Cincinnati, O.



Made in four sizes, Nos. ½, 1, 2, and 3.

JACKS FOR BUGGIES AND WAGONS

Miller Patent Wagon Jack Made by

J. V. HANKINSON,

Successor to THOS. MILLER,

FRANKLIN, OHIO.

Write for particulars and prices.

Our New Catalogue

shows an exceptionally complete line of high-grade Vehicle Hardware, Trimmings and Fittings—most of which are manufactured in our new Factory—the best equipped plant of its kind in America.

¶ We were never so well prepared to serve you promptly and efficiently as **now.** We would be pleased to quote you on any special goods you may have in mind.

The English & Mersick Co.

123 Winchester Avenue
New Haven, - - Conn.

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.

745 THIRD AVE., BROOKLYN, N. Y.

Digitized by Google

ECCLES BALL-BEARING COUPLINGS

The cut shows our coupling bolted to axle, and the form our flat leather bushing takes when the shafts are placed and locked in the coupling. The leather can be securely fastened in by the user, by driving a soft wire nail through the small hole we drill, which clinches it.

When the shafts are removed, the bushing does not come out, but stays in the Coupling where it belongs. NO LOST BUSHINGS WHEN YOU USE OUR COUPLINGS.

We would like to send you our circular and have you try our Couplings. They will save you money.



Patented June 11, 1907.

Patented Nov. 25, 1902.

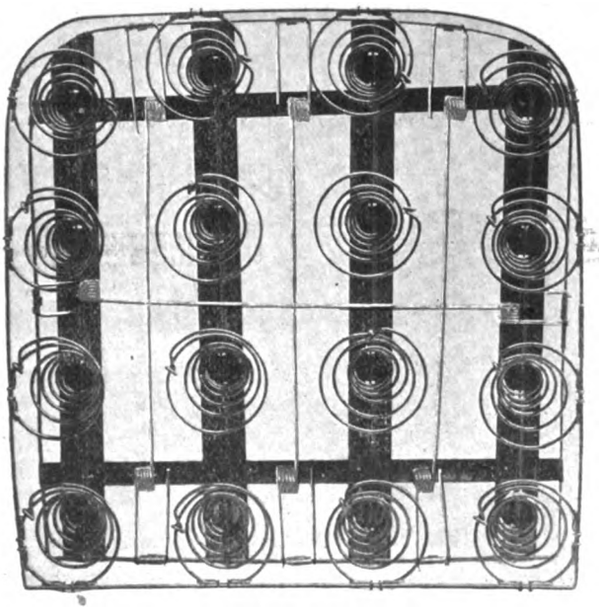
The spring is pivoted at the front so that it can be turned forward out of the way of the wrench while clipping the Coupling to the axle.

These are two of the good points, but there are plenty more desirable features in our Couplings.

We also have a Catalogue showing our full line of CARRIAGE and WAGON FORGINGS, all of which we make

RICHARD ECCLES COMPANY, AUBURN, N. Y.

ROYAL ARCH AUXILIARY SPRINGS

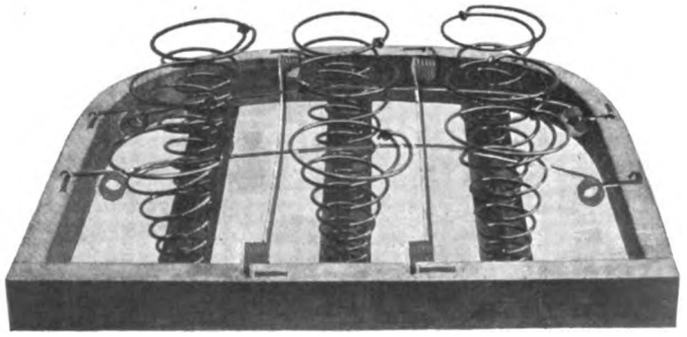


Soft Face Construction. Patented.

ROYAL ARCH AUXILIARY SPRINGS prevent the complete depression of the coiled springs, relieve the coils of the severe shocks, and greatly lengthen the life of the cushion. A cushion with Royal Arch Springs will never sag, and

FORTIFIES THE RIDER AGAINST THAT SUDDEN UNEXPECTED JAR

Will cost no more than the common construction. Why? Write us.



Wood Frame Construction. Patented.

Auxiliary Spring & Ventilating Button Co.

DETROIT, MICH.

Digitized by Google

THE KALAMAZOO TIRE SETTER

Made for hand or power. Cut shows power machine.

Weighs 1275 Lbs.

Will set all tires from light buggy tires up to wagon tires 3 x3-4.

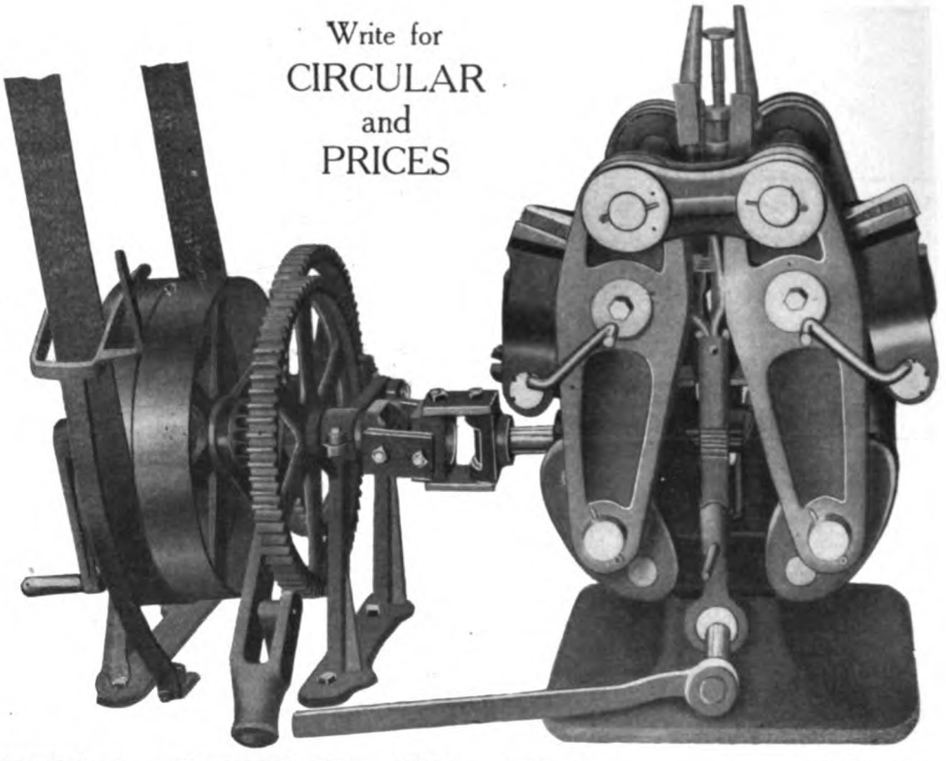
Will set

20 Tires Per Hour

Almost indestructible.

Will not break or wear out.

Write for CIRCULAR and PRICES



KALAMAZOO TIRE SETTER CO., Kalamazoo, Mich.

INDEPENDENT OF ALL COMBINATIONS

The Eagle White Lead Company's

"EAGLE" BRAND OF "OLD DUTCH PROCESS" WHITE LEAD

ALSO "EAGLE" RED LEAD, LITHARGE AND ORANGE MINERAL

Our **Special Coach and Carriage White Lead** is the best white lead on the market for this class of work.

We claim for our **"Eagle" Red Lead** that, for Durability, Color, Texture, Covering and Spreading Properties, it is not excelled by any red lead in the world. It requires more pure linseed oil to the hundred pounds, and when properly mixed it will not settle. It is the best foundation coating for vehicles known.

New York—54 Maiden Lane
H. C. Russell, *Manager*
Philadelphia—1901 Callowhill St.
Baltimore—447 North St.
Geo. O. Shivers, *Manager*
Buffalo—Builders' Exchange
A. S. Goltz, *Manager*
Pittsburg—
Pittsburg Paint Supply Co., *Agts.*
Cleveland—
The Hale & Holmes Co., *Agents*
Chicago—125-127 N. Peoria St.
E. B. Bennett, *Manager*
St. Louis—405a Benoist Bldg.
B. P. Temmeyer, *Manager*
Kansas City—
W. R. McDonald, *Agent*
New Orleans—
Jno. R. Todd & Bro., *Agents*
Dallas—Jack H. Frost,
Agent for State of Texas

Eagle White Lead Co., Cincinnati, Ohio

HOTEL CUMBERLAND

NEW YORK

Southwest Cor. Broadway at Fifty-fourth St.

Near 50th St. Subway and 53d St. Elevated Stations and accessible to all surface lines.



Headquarters for Carriage and Automobile Trade

Ideal Location, Near Theatres, Shops and Central Park.

NEW AND FIREPROOF
STRICTLY FIRST-CLASS
IN EVERY RESPECT

All Outside Rooms. No Carpets.
All Hardwood Floors and Oriental Rugs.
European Plan.

Transient Rates, **$2.50** with Bath, and up.

Restaurant Unexcelled. Prices Reasonable.

SEND FOR BOOKLET.

HARRY P. STIMSON, *Formerly with Hotel Imperial.*

R. J. BINGHAM, *Formerly with Hotel Woodward.*

Digitized by Google

SOMETHING ENTIRELY NEW



BY USING OUR

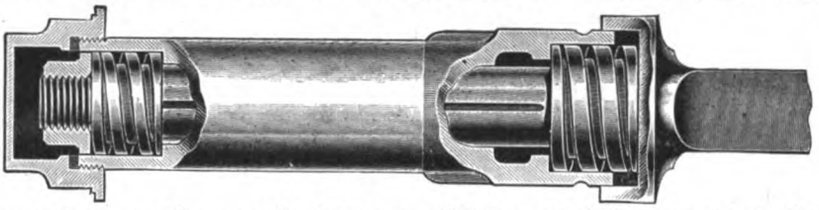
PENINSULAR Ball-Bearing Attachments

you can change any common axle into a ball-bearing job in ten minutes' time. **It is no longer necessary to carry ball-bearings in stock.** After the buggy is completed as a regular common axle job you can in ten minutes change it to a ball-bearing job.

LET US TELL YOU ABOUT IT.

The Sparks-Withington Co., Jackson, Mich.

PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

DALZELL AXLE CO., South Egremont, Mass.

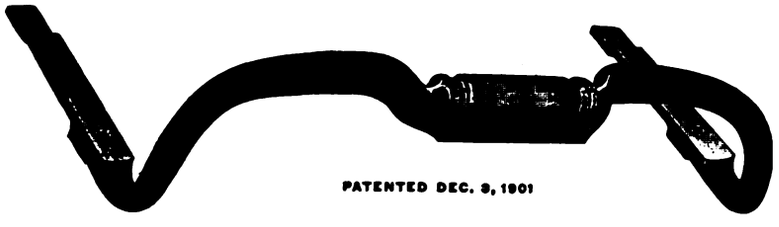
Axles

A complete line of Wagon and Carriage Axles—Common, Concord, Farm Wagon, Half Patent, Long Distance, Collinge and Mail Patent. Empire Ball Bearing Axles. Made only by

SHELDON AXLE COMPANY, Wilkes-Barre, Pa.

The Best and Easiest Riding Springs, for both Light and Heavy Vehicles. We have had very great success with our Automobile Springs : : : : : :

Springs



THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland Pa.

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

Digitized by Google



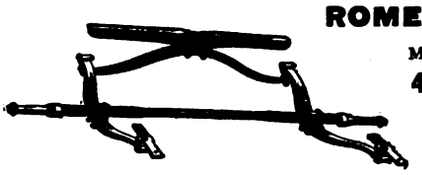
BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.

FITCH GEAR CO.

ROME, N. Y., U. S. A.



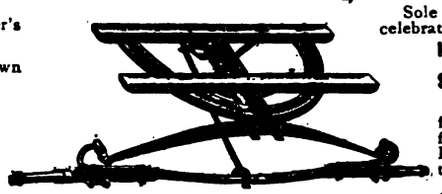
Manufacturers of over

40 STYLES of GEARS

From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.

Sole Manufacturers of the celebrated

Kramer Lowdown Short Turn Gear



Kramer's Patent Lowdown Gear.

It is the Finest Gear for Drop Centre-Body for Milk, Bakers' or Butchers' Wagons on the market.

Send for our No. 22 Catalogue, just out.

ROCHESTER WHEEL CO.

BROCKPORT, N. Y.

Manufacturers of

Sarven, Warner, Sweet, Compressed and Shell Band Wheels

In All Sizes Up To 2⅝ in. Spoke.

Plain or Channel Tire applied and boxes set if desired.
The Largest and Best Equipped Factory in the State.
Write for List and Discounts.

HOTEL WESTMINSTER

Irving Place and 16th Street

NEW YORK CITY.



One block from **Union Square,** Surface, Elevated and Subway Cars. Midway between leading **Wholesale** and **Retail Stores** and **Theatres,** and yet far enough from Broadway to insure **Comfort** and **Freedom** from the noise and bustle of that thoroughfare.

Perfectly Quiet Locality and **Home-like** in every respect.

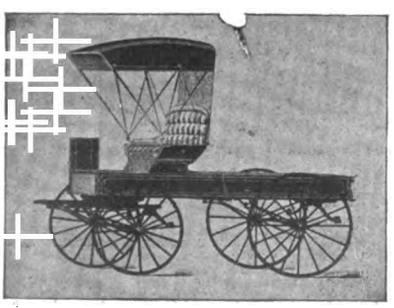
EXCELLENT CUISINE, EUROPEAN PLAN.

Single Rooms, $1.00 per day and up. Room with Bath, $2.00 per day and up. Parlor, Bedroom and Bath, $3.00 per day and up.

SEND FOR BOOKLET.

O. H. FOSTER, Proprietor.

To All Dealers



handling ARMLEDER Business Wagons there is a sense of EXTREME SATISFACTION that comes from selling an article of intrinsic and true merit.

Just sell ONE of our wagons and TEST IT FOR YOURSELF.

At any rate get our Form N Catalogue and Price List.

The O. Armleder Co. CINCINNATI OHIO

Headquarters for "The H. D. Smith & Co.'s" Carriage and Wagon Forgings

JACOB GERHAB

DEALER IN

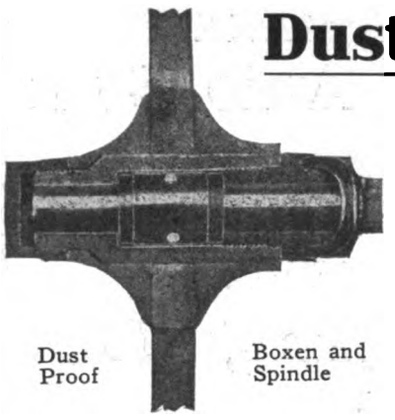
Carriage Cloths, Leathers and Trimmings, Wagon and Cart Material

Salable prices and all information cheerfully furnished

158, 160, 162 and 164 North Third Street
PHILADELPHIA, PA.

Digitized by Google

Dust-Proof Axles AND Wheels



Dust Proof

Boxen and Spindle

NEAT, DURABLE and LIGHT RUNNING

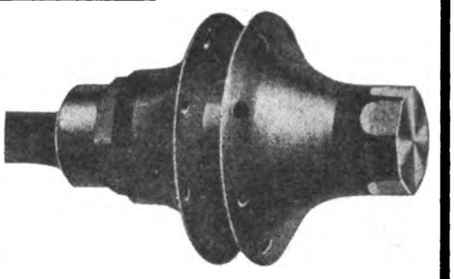
These Axles and Wheels have been used on all kinds of roads and proved satisfactory at all times and are

MANUFACTURED BY

DUST-PROOF AXLE and WHEEL CO.

523 Market St. LOGANSPORT, IND.

Write for Prices and Circular.



Assembled Hub and Spindle.

Peerless Buggy Top Co.

MANUFACTURERS OF

AUTOMOBILE AND BUGGY TOPS

Backs, Cushions and Storm Aprons.

And all Kinds of CARRIAGE TRIMMINGS. **CINCINNATI, OHIO.**

Our Carriage or Spring Edge Cushion Frame



Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.

NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

Journal for the Carriage and Automobile Trade

The Hub

Published Monthly at Two Dollars per Year

PATENT AND ENAMELED LEATHER

MANUFACTURED BY THE

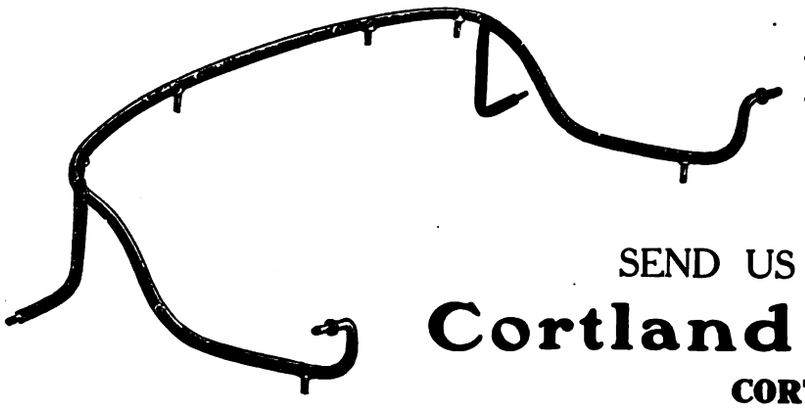
STANDARD LEATHER COMPANY

Allegheny City, Penna.,

For Carriage, Furniture and Automobile Manufacturers

Is Second to None. Prices and Samples Submitted on Request.

Digitized by Google



WE MAKE

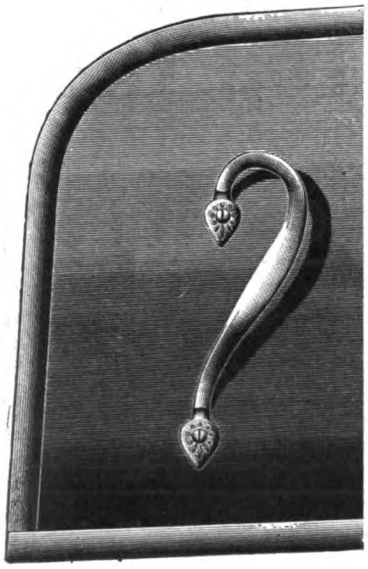
Buggy Auto Seat Shifting Rails

OF ALL DESCRIPTIONS

SEND US YOUR PATTERNS.

Cortland Forging Co.

CORTLANDT, N. Y.





. . OUR . .

AUTO HANDLES

Will save you from 35 to 50 per cent.

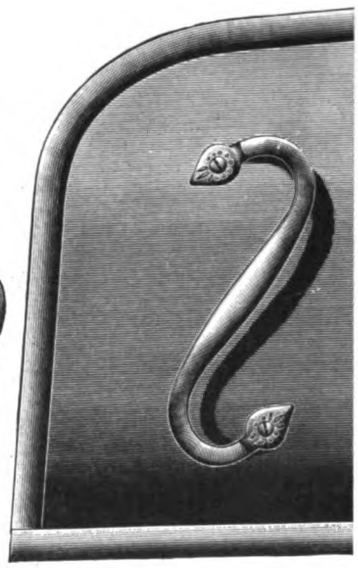
ENTERPRISE

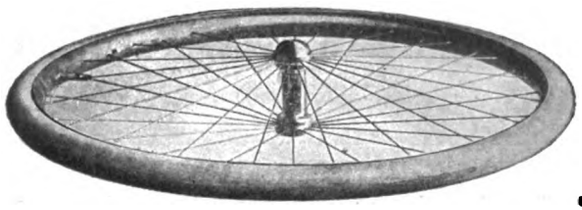
Brass & Plating Co.

CINCINNATI, OHIO.

Write for Samples and Prices







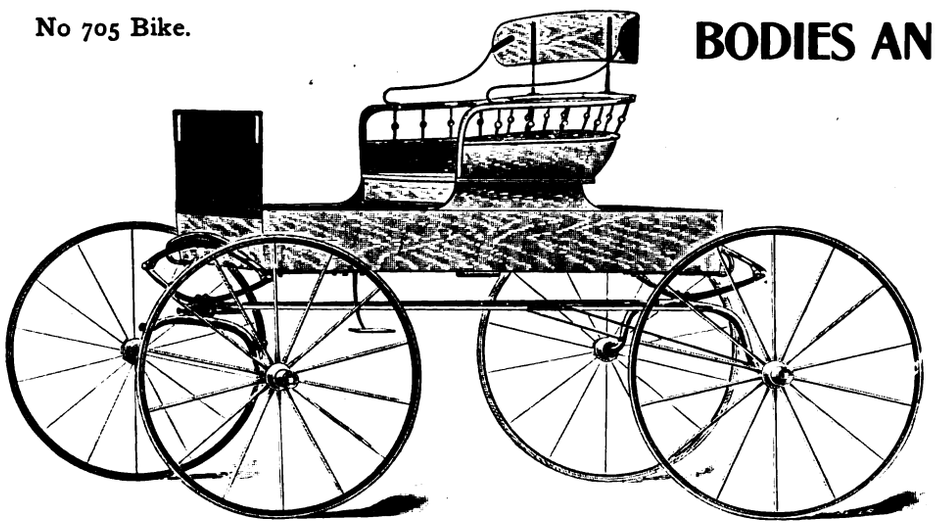
STEEL WIRE WHEELS

For CARRIAGES, SURREYS, ROAD CARTS & SULKIES

Builders, don't order a wheel or close a contract without first asking for and receiving our Catalogue, together with prices.

Jamesville Mfg. Co., Jamesville, N. Y.

No 705 Bike.



BODIES AND GEARS IN THE WHITE

Whether Bodies, Gears or Complete Vehicles, we have the greatest variety of up-to-date and practical styles. A line of Modern **Automobile Bodies** is one of our specialties.

TOPS AND TRIMMINGS

We are prepared to furnish a complete line of Tops and Trimmings in all styles, and to insure prompt shipments.

GET OUR CATALOGUE.

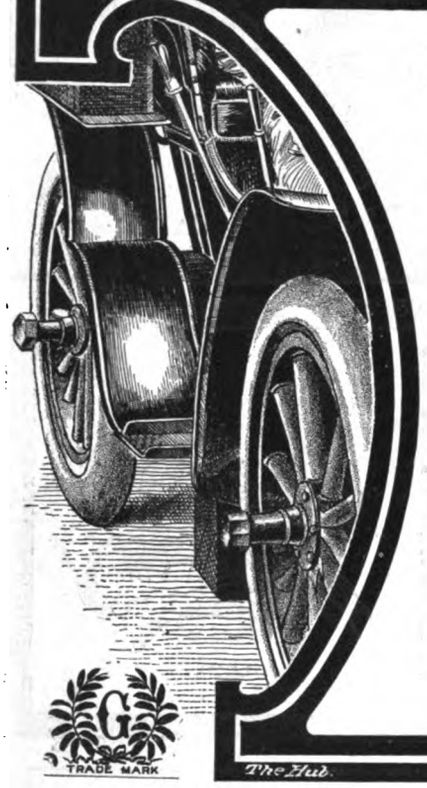
Schubert Bros. Gear Co.

ONEIDA, N. Y.

Please mention "The Hub" when you write.

Digitized by Google

GOODRICH TIRES



How to Get Along to the Best Advantage

USE **GOODRICH TIRES**

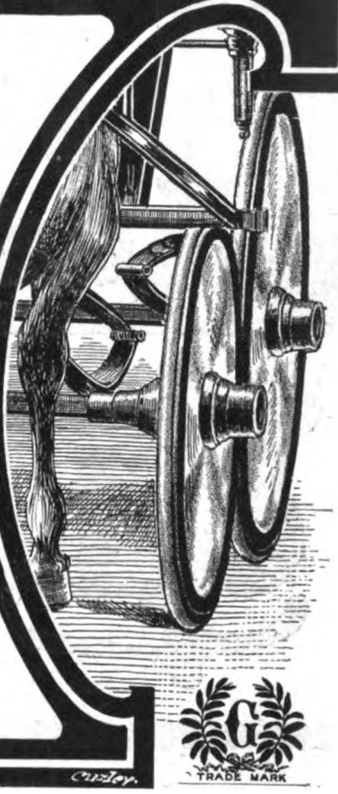
Goodrich Solids for the horse-drawn pleasure vehicle.

Goodrich Pneumatics for the motor car.

THE B. F. GOODRICH COMPANY
AKron, Ohio

Philadelphia, 1332 Arch St. *Chicago*, 24 E. Lake St.
Detroit, 266 Jefferson Ave. *Boston*, 161 Columbus Ave.
St. Louis, 3926-28 Olive St. *Cleveland*, 2188 Ninth St. S. E.
Denver, 1536 Glenarm St. *San Francisco*, 50-60 Fremont St
Seattle, 310 First Ave. S. *Los Angeles*, 818 S. Broadway.
London, 7 Snow Hill, E. C.

Our products are also handled in
New York, 66-68 Reade St. *Buffalo*, 731 Main St.
by The B. F. Goodrich Company of New York.
No. 2 Rue Brunel, Avenue de La Grande Armee, Paris, France.



TRADE MARK TRADE MARK

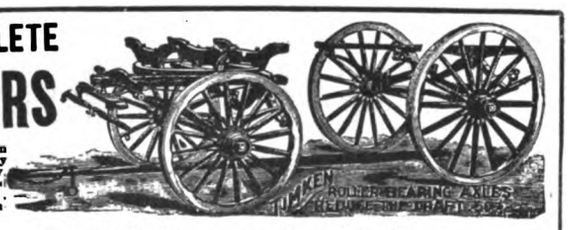
IF YOU WANT TO
KEEP POSTED
READ **THE HUB**

Build Your Own Auto

A GASOLINE ENGINE TO FIT ANY BUGGY or WAGON

LANDSMAN MOTOR CO.
908 Hickory St. ST. LOUIS, MO.
Write for Catalogue.

COMPLETE GEARS



As shown herewith, ready to receive body for light and heavy work, can be furnished promptly

Trussed Platform Wagon Gear Complete, Ready for Body.

In ordering, give full specifications, or such descriptions as will enable us to make up specifications.

Also Combination and Three-Spring Gears in several styles.

1,000 Styles and Sizes "SELLE GEARS." WRITE FOR CATALOGUE B.



THE AKRON-SELLE GEAR CO., Akron, O., U. S. A.

MANUFACTURERS

DESIRING FIRST-CLASS ILLUSTRATIONS OF THEIR PRODUCT, AT REASONABLE PRICES, SHOULD PERMIT US TO SUBMIT AN ESTIMATE.

Central Bureau of Engraving
COMMERCIAL ENGRAVERS
157-159 WILLIAM STREET, NEW YORK

Digitized by Google

THE BRADLEY SHAFT COUPLING



OPEN

Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME!

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1½ in. in section.

C. C. BRADLEY & SON, Syracuse, N. Y.



CLOSED

JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

MILLER BROTHERS

Builders of

CARRIAGES

IN THE WHITE

AND

Automobile Bodies

AMESBURY, MASS.

THE OHIO SEAT CO.

Manufactures PANEL SEATS

STICK SEATS of every description.

Also Canopy Frames, Cushion Frames and Buggy High Backs. Up-to-date Equipment. Write for Quotations.

1964-1966 CENTRAL AVE., CINCINNATI, O.

BOLT CLIPPERS
PORTER PORTER PORTER
EVERETT, MASS. U.S.A.

WM. WIESE
With Hardt, Von Bernuth & Co.
Since 1883.

WM. WIESE & CO.

ALBERT MAERTENS
With Hardt, Von Bernuth & Co.
Since 1894.

Formerly Carriage Goods Department of HARDT, VON BERNUTH & CO.

Carriage and Automobile Linings and Livery Cloths

Sole Agents in the United States for
WULFING'S CARRIAGE CLOTH AND EL DE BARAN GOATSKIN.

66-68 Greene St., New York

Please mention "The Hub" when you write.

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES } **C. T. RAYNOLDS & CO'S** { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES }

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

Bimel-Ashcroft Manufacturing Company

Main Office, POPLAR BLUFF, MO.

Factories:
POPLAR BLUFF, MO.
MOREHOUSE, MO.
DERMOTT, ARK.
LOUISVILLE, MISS.

Foreign Correspondence Solicited.

SPOKES

OUR GROWTH

1902—1,310,241 Spokes
1903—3,240,185 Spokes
1904—5,485,748 Spokes
1905—7,845,653 Spokes
1906—7,927,759 Spokes
1907—7,748,839 Spokes

Our New Plant Increases Our Capacity to 12,000,000 Spokes

The ZWICK & GREENWALD WHEEL CO.

Dayton, Ohio

MAKERS OF

HIGH GRADE VEHICLE WHEELS
SARVEN PATENT COMPRESSED BAND HUB
AND STEEL SHELL BAND WHEELS

WE MAKE A SPECIALTY OF TIRING WHEELS **WRITE FOR PRICES**

Digitized by Google



No. 264—List Price same as No. 220.

McKINNON DASH COMPANY

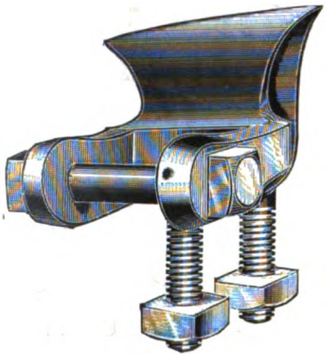
Cincinnati, Ohio.
Troy, Ohio.

BUFFALO, N. Y.

St. Catharines
Ontario

For a Corning body our new No. 264 with leather covered end rails is very attractive.

It will look best 18 inches high.



Skewed Shaft Couplings

FOR

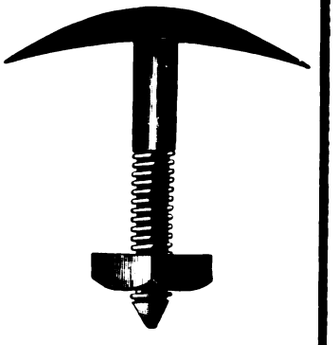
High Arched Axles

Furnished in Rights and Lefts for Any Height of Arch.

Bolts, Nuts, Washers, Carriage Hardware and Special Forgings

1908 Catalog "H" on application.

COLUMBUS BOLT WORKS, Columbus, O.



KOKOMO TIRES

SEEING, they say, is believing, but in Rubber Tires the surface appearance does not count. The story of "Kokomo" Tires has always been one of **feeling.** It presents the only true method of arriving at the real merits of a tire.

Pure Rubber is an important part of the "Kokomo" compound. You don't have to ask the man on the box if they give complete satisfaction—he tells you so.

"Kokomo" always for comfort and long service.

Kokomo Rubber Company

Kokomo, Indiana, U. S. A.

Digitized by Google



Digitized by Google

Vol. L., No. 2. MAY,

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

C. A. WILLEY COMPANY

Color Grinders

AND MANUFACTURERS OF

SPECIALTIES IN CARRIAGE and CAR PAINTS, COLORS, Etc.

WILLEY'S SUPERFINE C CO & CH R SPECIALTIES COLORS TRADE MARK.

92d St. Cars at Hunter's Point Ferry Pass our Factory.

Hunter's Point, New York City

CALL AND SEE US WHEN IN NEW YORK.



CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

Transfers for all Purposes

SCROLLS, FIGURES, FLOWERS, LETTERS, ANIMALS
STRIPINGS, NUMERALS, CORNERS



DECALCOMANIE



SPECIAL NAME PLATES OF ALL DESCRIPTIONS
BUGGY ORNAMENTS IN SETS

No shop is complete without our catalog. Send for one.

Palm, Fechteler & Co.

NEW YORK: 67 Fifth Ave. CHICAGO: 43-45 La Salle St. MONTREAL. E. LIVERPOOL, O.

HEAR YE!
HEAR YE!
HEAR YE!

All ye who labor in the Finishing Rooms of the Carriage and Automobile Industries! The best wearing and most beautiful and lasting finish is obtained by the use of

HARLAND'S ENGLISH VARNISH

The merits of Harland's Varnishes are backed by over a century of progress, and it is the unsurpassed quality of this varnish which has not only given the makers a universally pre-eminent position, but has also made it the standard by which all others are compared.

WM. HARLAND & SON
168 CENTER ST.
Factories: Merton, London S. W., England. NEW YORK



Digitized by Google

JOHN W. MASURY & SON

MANUFACTURERS OF

Superfine Coach Colors
:: :: and Varnishes :: ::

NEW YORK and CHICAGO

WHITE'S BRAZING SLEEVES

MANUFACTURED BY

H. F. WHITE, 111 E. Pearl St., Cincinnati, O.

"Not how cheap but how good"

Beckwith-Chandler Company

Manufacturers of High-Grade

COACH AND RAILWAY VARNISHES

NEWARK, N. J. 201 EMMETT STREET

NEW YORK 320 FIFTH AVENUE

"100 per cent. quality in every can"

Kelly-Springfield

It's There All Ways



The Tire of Fashion Comfort and Service

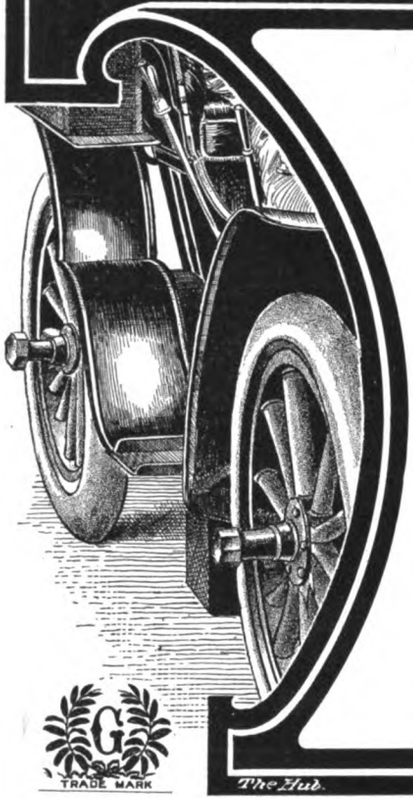
Consolidated Rubber Tire Co.

NEW YORK

Factories: AKRON, OHIO

Digitized by Google

GOODRICH TIRES



How to Get Along to the Best Advantage

USE **GOODRICH TIRES**

Goodrich Solids for the horse-drawn pleasure vehicle.

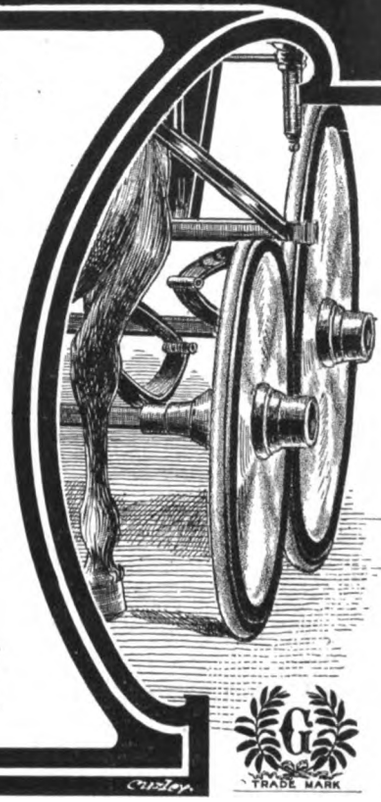
Goodrich Pneumatics for the motor car.

THE B. F. GOODRICH COMPANY
AKron, Ohio

Philadelphia, 1332 Arch St. — *Chicago*, 24 E. Lake St.
Detroit, 266 Jefferson Ave. — *Boston*, 161 Columbus Ave.
St. Louis, 3926-28 Olive St. — *Cleveland*, 2188 Ninth St. S. E.
Denver, 1536 Glenarm St. — *San Francisco*, 50-60 Fremont St
Seattle, 310 First Ave. S. — *Los Angeles*, 818 S. Broadway.
London, 7 Snow Hill, E. C.

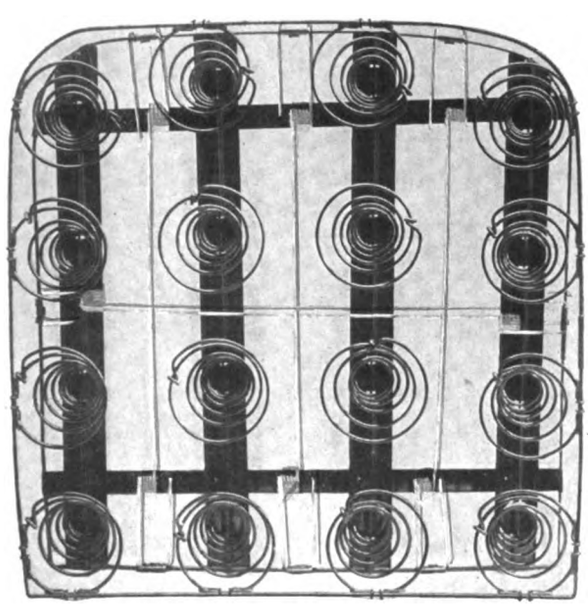
Our products are also handled in
New York, 66-68 Reade St. — *Buffalo*, 731 Main St.
by The B. F. Goodrich Company of New York.

No. 2 Rue Brunel, Avenue de La Grande Armee, Paris, France.



TRADE MARK — The Hub. — Cupley. — TRADE MARK

ROYAL ARCH AUXILIARY SPRINGS



Soft Face Construction. Patented.

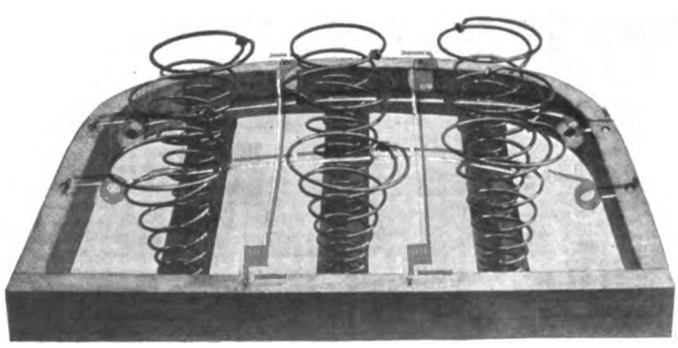
Auxiliary Spring & Ventilating Button Co.

DETROIT, MICH.

ROYAL ARCH AUXILIARY SPRINGS prevent the complete depression of the coiled springs, relieve the coils of the severe shocks, and greatly lengthen the life of the cushion. A cushion with Royal Arch Springs will never sag, and

FORTIFIES THE RIDER AGAINST THAT SUDDEN UNEXPECTED JAR

Will cost no more than the common construction. Why? Write us.



Wood Frame Construction. Patented.

Please mention "The Hub" when you write.

Digitized by Google

Lawson Varnishes

Trustworthy goods.

Compounded to meet difficult requirements.

Ripened into perfect condition.

Durable, easy-working qualities. Quick if desired.

There is a friend in every gallon, if the mind is free from bias, and the pocket open to conviction.

The test of this varnish supplies its best argument.

TRADE VALENTINES VARNISH MARK

Valentine & Company

New York Chicago Boston Paris Amsterdam Toronto Montreal

WING RUBBER CARRIAGE TIRES



are made from tough, durable, lively New Rubber. QUALITY is the first consideration. Our "Wing" Tire will outwear several ordinary rubber tires. The wings (see cut) keep water, sand and grit from working between the channel and the tire, to wear out the tire from underneath. Write for particulars.

GOODYEAR AKRON, OHIO TRADE MARK.

The Goodyear Tire & Rubber Co.
Carriage Tire Dept.
Akron, Ohio

BRANCHES: Boston, New York, Buffalo, Chicago, Cincinnati, Detroit, St. Louis, Denver, Los Angeles, San Francisco.

81 Years' Experience in Every Can

E.S. 1827 & CO.

Edward Smith & Co.

Rough Stuff and Colors

The highest quality made

New York 45 BROADWAY

Chicago 59 MARKET ST.

Here's a Record Breaker!

During the months of January, February, March and April, 1908, one dealer in the middle west sold Rambler automobiles to the value of $127,325.93.

There is a big opportunity for substantial business men to add greatly to the volume of their business by selling Rambler automobiles.

More business of all kinds is being done in the middle and south west to-day than in any other section.

Right now Kansas City, perhaps the choicest location of all, is open for the sale of Rambler automobiles.

The Rambler sales agency proposition is reciprocal and is bound to interest any wide-awake business man.

Write for particulars now.

THOMAS B. JEFFERY & COMPANY

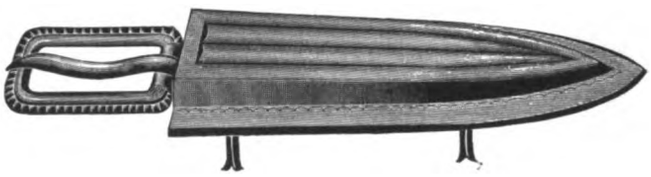
Main Office and Factory Kenosha, Wisconsin

Please mention "The Hub" when you write.

Digitized by Google

You Will Never Know

how good these Loops are until you try them out.



¶ The BUCKLE LOOP shown is our Number 8. Nobby, isn't it?

¶ Number 9 Strap Loop is its running mate.

¶ Then there is Number 14, Double Buckle Loop.

¶ All are Patent Leather, Silk Stitched and are capable of going in fast company.

CRANDAL, STONE & CO.

BINGHAMTON, N. Y.

MERITAS

CARRIAGE ENAMELED **OIL CLOTH**



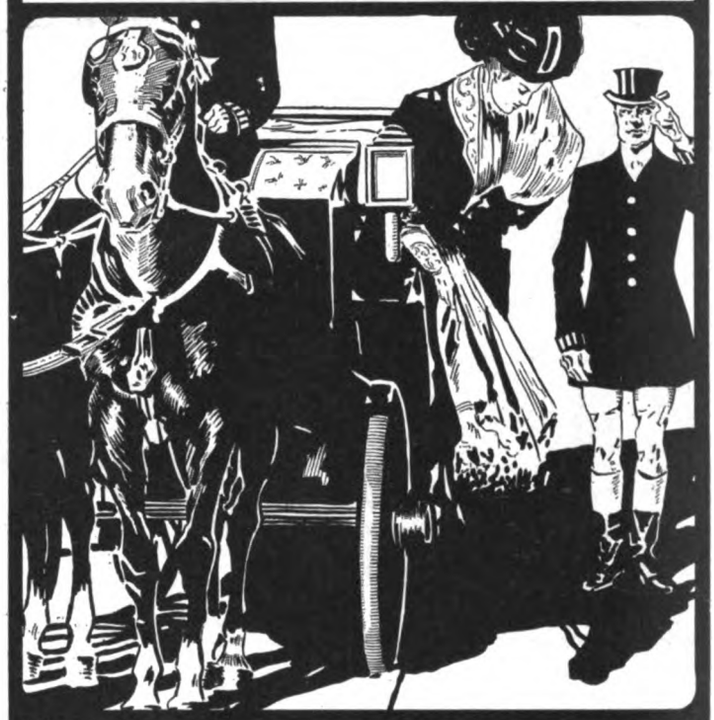
MERITAS is not only sun proof and rain proof but wear and tear proof.

It's built for service and guaranteed by the trade mark on the back of each yard.

Standard Oil Cloth Co.

320 Broadway, NEW YORK.

STEIN DOUBLE CUSHION TIRE





Patented 1892-1902.

DOUBLE CUSHION

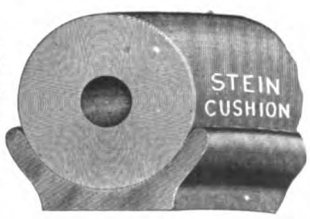
is no mere name or fancy, but an established and recognized fact in connection with the

STEIN DOUBLE CUSHION TIRE

Seeing, they say, is believing, but to appreciate the double cushion reality existent in our tires—ride over them. What was previously an idea then becomes an establshed fact.

The Stein Double Cushion Tire will be a big talking point in your 1908 line. Be wise and get next to our proposition.

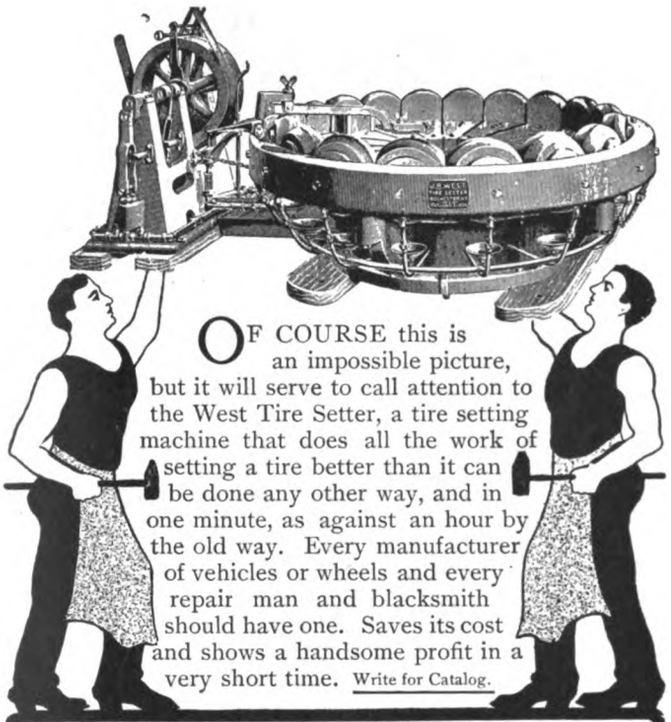
The most serviceable rubber tire on earth.



STEIN DOUBLE CUSHION TIRE CO.

Akron Ohio

Digitized by Google



OF COURSE this is an impossible picture, but it will serve to call attention to the West Tire Setter, a tire setting machine that does all the work of setting a tire better than it can be done any other way, and in one minute, as against an hour by the old way. Every manufacturer of vehicles or wheels and every repair man and blacksmith should have one. Saves its cost and shows a handsome profit in a very short time. Write for Catalog.

The West Tire Setter Co.
Rochester, N.Y.

INTEGRITY

In the development of the great **Studebaker** vehicle plant from a small one-forge shop to an establishment covering more than a hundred acres, **Studebaker** methods have necessarily multiplied and changed.
The one factor as unalterably fixed to-day as it was a half century ago is **Studebaker** INTEGRITY—the absolute determination to produce as good a wagon or buggy, or set of harness, for a specified purpose as it is possible to build.
Your interest in these facts is obvious. As a vehicle dealer they bear directly upon the standing possible for your trade.

The dealer who builds up a business selling Studebaker vehicles has a trade that is permanent and profitable

Studebaker

Some splendid opportunities open for good reliable dealers. Write us for available territory and inducements to "Studebaker" dealers. Mention this advertisement and this paper.

Studebaker Bros. Mfg. Co.
South Bend, Indiana

THE EAGLE WHITE LEAD CO. PURE WHITE LEAD CINCINNATI

INDEPENDENT OF ALL COMBINATIONS

The Eagle White Lead Company's

"EAGLE" BRAND OF "OLD DUTCH PROCESS" WHITE LEAD
ALSO "EAGLE" RED LEAD, LITHARGE AND ORANGE MINERAL

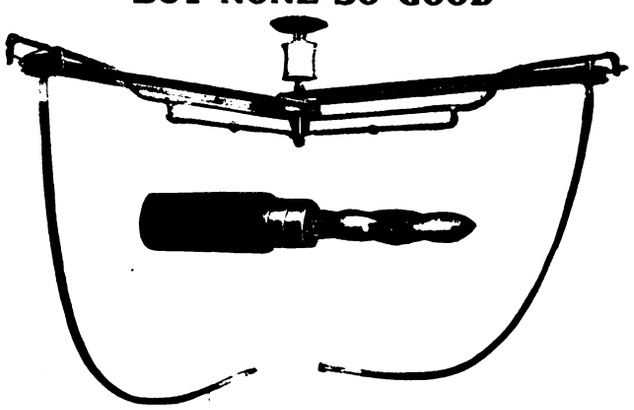
Our **Special Coach and Carriage White Lead** is the best white lead on the market for this class of work.

We claim for our **"Eagle" Red Lead** that, for Durability, Color, Texture, Covering and Spreading Properties, it is not excelled by any red lead in the world. It requires more pure linseed oil to the hundred pounds, and when properly mixed it will not settle. It is the best foundation coating for vehicles known.

New York—54 Maiden Lane
H. C. Russell, *Manager*
Philadelphia—1901 Callowhill St.
Baltimore—447 North St.
Geo. O. Shivers, *Manager*
Buffalo—Builders' Exchange
A. S. Goltz, *Manager*
Pittsburg—
Pittsburg Paint Supply Co., *Agts.*
Cleveland—
The Hale & Holmes Co., *Agents*
Chicago—125-127 N. Peoria St.
E. B. Bennett, *Manager*
St. Louis—405a Benoist Bldg.
B. P. Temmeyer, *Manager*
Kansas City—
W. R. McDonald, *Agent*
New Orleans—
Jno. R. Todd & Bro., *Agents*
Dallas—Jack H. Frost,
Agent for State of Texas

Eagle White Lead Co., Cincinnati, Ohio

There Are Others
BUT NONE SO GOOD



THIS IS THE
RADIAL BORING MACHINE
THAT GIVES SATISFACTION.
SPECIAL PATENTED PLUG BIT AND OTHER ATTACHMENTS IF DESIRED.
STEEL LINK CORE, STRONG AND DURABLE

PRICES:
Double Arm Machine, with Chuck.....$85.00
Single Arm Machine, with Chuck..... 65.00
A Discount of 15 per cent. when cash accompanies order

The Flexible Shaft & Tool Co.
BELLEFONTAINE, OHIO.

Digitized by Google

The Hub

Copyright, 1908, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. L. NEW YORK, MAY, 1908. No. 2.

THE TRADE NEWS PUBLISHING CO. OF N. Y.

Publishers of THE HUB

J. H. WRIGHT, *President.* G. A. TANNER, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

JACOB H. KLEIN, *Technical Editor.*

REPRESENTATIVES:

J. HENRY KLUNE. J. G. TANNER. B. H. HULL.

THE HUB is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of TRADE NEWS PUBLISHING CO.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

FRANCE.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

GERMANY.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

ENGLAND.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

The Need and the Opportunity.

The experience of the young designers who have graduated from the Technical School for Carriage Draftsmen during the past five years should be, and, where known, is an encouragement and a stimulus to young men in the carriage factories of the country. If a young man learns book-keeping he may or may not find a situation. Hundreds do not. Some do in time when they have half forgotten what they learned.

But when a young man completes a course in carriage drafting and has developed any aptitude he does not have to wait. Positions are waiting for him. The history of graduates has proven this to be true. Professor Johnson, of the School, knows the career of each graduate and he is able to testify to the truth of the statement that there is employment at remunerative wages for all who are fitted. Professor Johnson does not turn out young men who are not competent.

But what is of more importance to hundreds and thousands of young men in the factories and shops of the country is that they can acquire an education if they will and at a cost so trifling as to not merit the mention of cost. While the correspondence class has been growing steadily it has not been growing rapidly enough. Where there is one young carriage builder who is taking advantage of the opportunity to acquire knowledge that will be of use in his advancement, there are ten who could avail themselves of instruction to their lasting advantage.

The correspondence class has been established for the benefit of those who cannot afford to spend time in New York City, away from their work. The wonder is that Professor Johnson is not overwhelmed with work and does not require a half dozen assistants. The entire level of efficiency and proficiency in carriage shops can be and should be raised. The young men who are content to drudge along do not realize the possibilities of progress in technical education.

Employers owe it as a duty to the young men in their employ, or at least the bright ones who show ambition, to acquaint them in a forcible manner with the opportunities which are within their reach for a better and broader technical education. The impression unfortunately prevails that it is no use to take a correspondence course unless the applicant desires to become a draftsman. The education, while directed to that end, when acquired, better qualifies the pupil to the general work of the factory.

Not all young men can be designers, but all young men can be better mechanics. It is this point that they should keep in view and endeavor by studious application out of working hours, through membership in a correspondence class, to fit themselves to do their work better. There is room for all such men and they will find their services in demand.

The Southern Builders.

Much of the success of the builders of carriages of the Southern States has been due to their strict attention to the construction of buggies and of a class of work familiar to the users of vehicles throughout the South. Some of the Southern builders who attended the New York convention explained much of their successes during the past two or three years in the vigorous and enterprising solicitation carried on through traveling agents. They have adopted practically the same enterprising and progressive methods to sell their work and to make their work known as Northern builders have been doing for many years. The success of Northern builders has been largely due to that thorough and persistent canvassing through traveling salesmen who considered it a part of their bounden duty to make a customer in every town they visited.

The Southern builders have not been slow to adopt the commercial methods which have resulted in the building up of immense plants in the North. Years ago they were more content than they now are to let their work speak for them; now they are speaking for their work. There has been a little drifting of first-class carriage salesmen from big Northern plants to big Southern plants. True, these transfers have not been numerous, but in the few cases where they have been made the Northern salesmen have applied the methods of doing business which they learned at home to the extension of the trade of their new

Digitized by Google

employers of the South. The result has been advantageous. The Southern builders have kept their eye upon the importance of doing the very best work that could be done by the employment of skilled labor and the use of good material. Inferior work is repulsive to the average Southerner and honest and first-class work is as natural for him as to breathe. If there has been anything lacking in the methods of Southern builders, it has been that they are not accustomed to hammering the trade and squeezing every possibility to extend and increase business. If there has been any shortcoming in this respect it is being overcome in thorough Southern enterprising fashion.

Iron and Steel Prices.

After numerous conferences during the past few weeks it has been definitely determined by the great iron and steel producing interests to hold prices up in defiance of the course of the natural law of supply and demand. Though the manufacturers have not favored the public with their reasons, they are pretty well known. The reasons are, they are able to keep prices up, and lower prices (they argue) would not sufficiently increase demand. Besides (they say privately) the present condition is temporary, that normal demand will come before long and that it is easier to keep prices up than to let them down and then push them up when times improve.

Whether their logic is good or bad, just or unjust, to consuming interests, iron and steel prices are to be kept up—if they can be. But that is a question. There are numerous large independent interests. Some of these interests have joined the ring. Some have not. Those who have not represent some of the bar iron interests, relatively a minor interest which the greater interests feel they can safely ignore. But as Robert Burns says, "The best laid plans o' mice and men gang aft aglee," and the iron and steel buyers hope that Robert may be right in this instance.

Creeping Westward.

The westward creeping of small carriage and wagon factories is spoken of by a few salesmen of large manufacturing firms. Plants are appearing in various localities in the far West and at a few points along the north Pacific coast. Repairing necessities are probably the basis, and the ease with which accessories can be had and the comparatively low freight rates, especially by water when accessories are shipped that way, encourage a few enterprising men to establish carriage shops. To buy a home-made buggy or light vehicle is something to some people. The vehicle dealers with their well-fitted floors are all right. But there are enough people to buy a vehicle associated in the home shop to explain why there has been in the past few months a sprinkling of new carriage shops under the shadows of the Rocky Mountains.

Another Step Towards Forest Conservation.

The meeting of the National Hickory Association and the American Vehicle Woodstock Association at Cincinnati recently brought together an exceptionaly large number of manufacturers and others interested in timber supplies. The great work will soon be entered upon of conserving supplies, through the concentrated action of the large interests represented on this occasion. Interest is thoroughly aroused. The importance of economic management of existing supplies is felt and will lead to early action through the co-operation of manufacturing interests and the Government. The preliminary efforts will consist of what practically amounts to the taking of an inventory of our national supplies and means to promptly and effectively prevent any further waste.

Growth of Association Spirit.

It is a good sign to note the disposition towards organization among the carriage builders in some Western centers. Organizations may not be established in all the places where organization is being talked up, but it is a good indication to see the subject talked about. The time may never come when the C. B. N. A. will be made up of representatives of local associations. It is probably best it should not be so. But it is certainly an element of strength to have as much membership of this sort as possible.

The resolution passed by the C. B. N. A. three or four years ago to encourage representation through the establishment of local associations has not as yet produced much representation, but one outgrowth of this resolution has been an increasing interest in such local associations. The real vitality of the National organization rests upon the voluntary conduct of carriage builders. To make membership from representatives of local associations would be to rob the association of much of its natural vitality and to give it a hide-bound effect. Within certain limits local association representation is an element of strength and permanency.

No Deterioration.

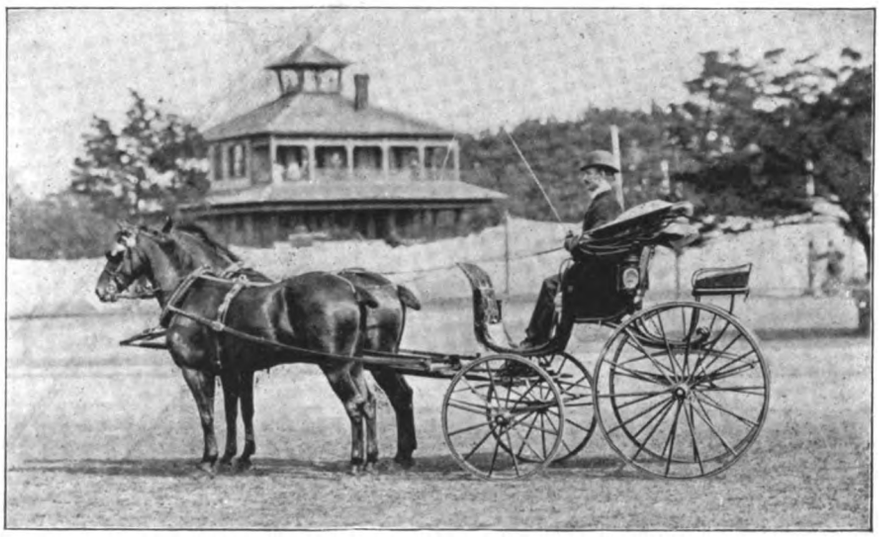
Carriage builders are authority for the statement that there is practically no deterioration in the quality of accessories that are being turned out in such quantities. The fact is that there is very little room for deterioration except possibly in paints and varnishes, and the vital necessity of maintaining reputation protects that great industry from deterioration. Iron, steel, lumber and turpentine and linseed oil are uniform in quality when they reach the manufacturer of accessories. Iron and steel making processes are such that there can be no decided variation in quality. Starting with the blast furnace, the science of smelting has reached a point where quality can be anticipated and assured. The processes of rolling are complete and leave practically no room for the admixture of impurities.

In lumber it is a matter of skillful selection. No expert need be deceived. In all lines of accessory manufacturing there is no occasion for inferior goods. Standards have been finally established and commercial integrity among manufacturers has reached a point where these standards are observed.

Speaking of the manufacture of automobiles on a large scale by carriage builders, it is well to note that most of these builders are in what is often designated as the "Central West," that is Ohio, Indiana, Illinois, Michigan, Wisconsin and perhaps Minnesota. One or two rather serious obstacles lie in the way of this proposed wholesale entry of carriage builders in the automobile field. One is the price. The other is the making of a machine which will call for a minimum of repairs. The Western carriage builders who purpose entering on automobile construction are very particular as to repairs. They argue (among themselves) that the automobile is not by far a perfect machine, that it "goes to pieces" too often, needs repairs too frequently, and that its construction is not favorable to ready, quick and cheap repairing. They point to their own horse-drawn structures as evidence of good work and endurance and comparative freedom from repairs. They argue (among themselves) that the automobile will never be a perfect machine until they get their hands in, i. e., until they have gone so far into automobile construction as to be able to suggest to the chassis maker how to improve it. Before they get very far in their new departure they will know something of the chassis they do not know now.

Digitized by Google

Illustrated Carriage Section, May, 1908.

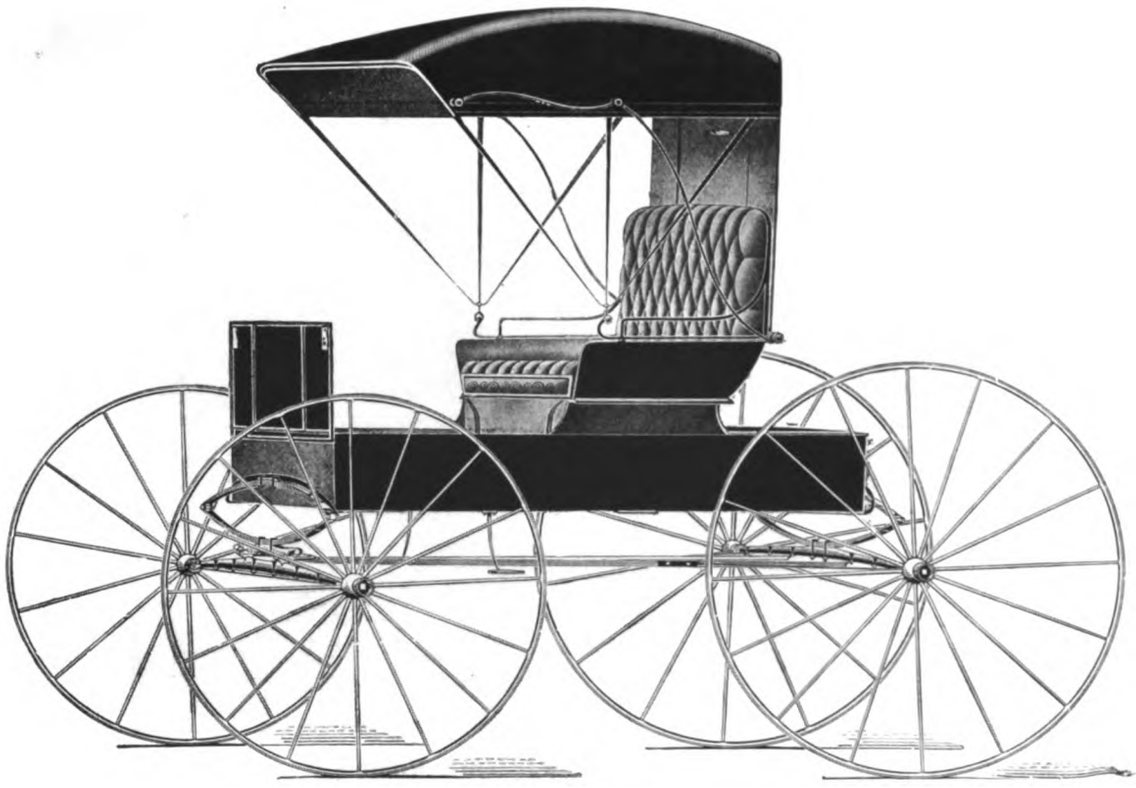


Ladies' Spider Phaeton, with Rumble.
Electrotype, $2.00.

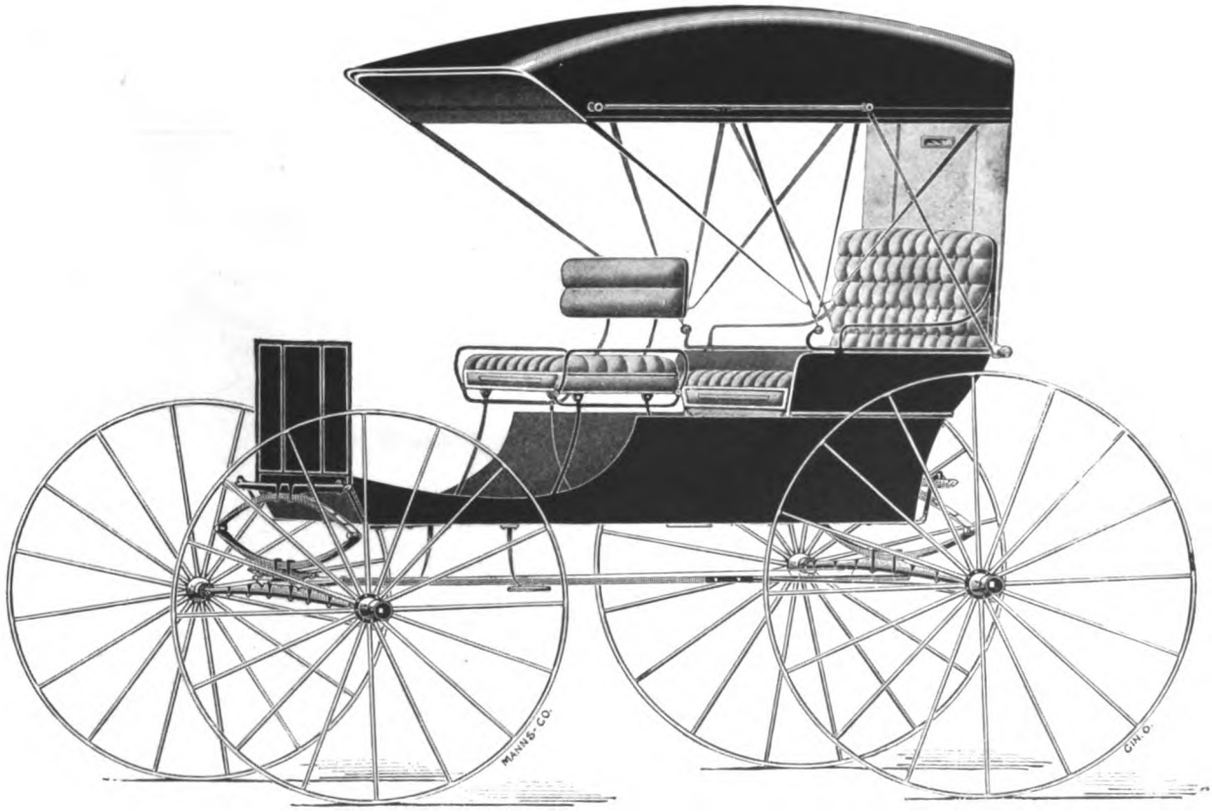


Driving Cart with Imitation Cane Body.
Electrotype, $2.00.

Digitized by Google

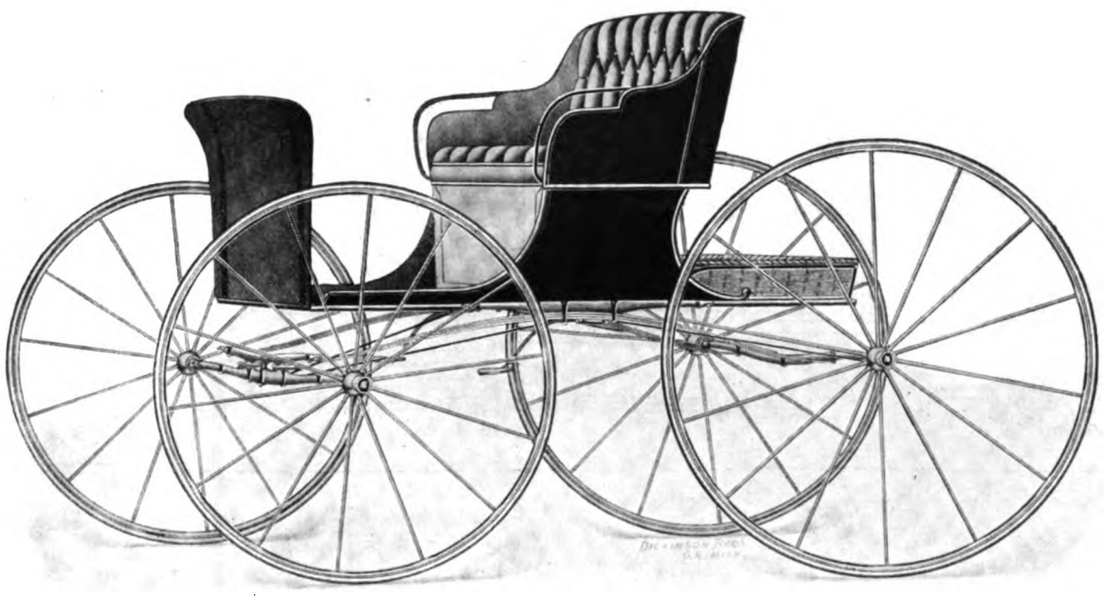


Elliptic Spring Piano-Box Buggy.
Built by Parry Mfg. Co., Indianapolis, Ind.

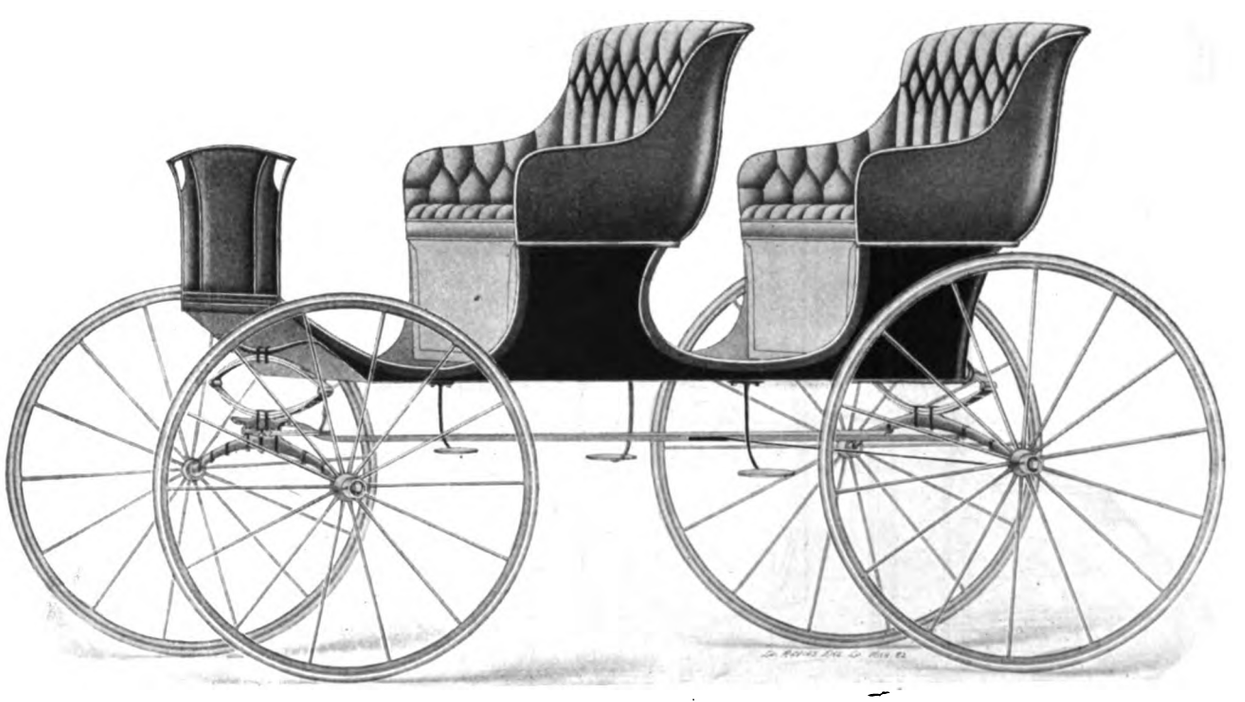


Built by the Brown Carriage Co., Cincinnati, Ohio.
Leather Top Jump-Seat Wagon.

Digitized by Google

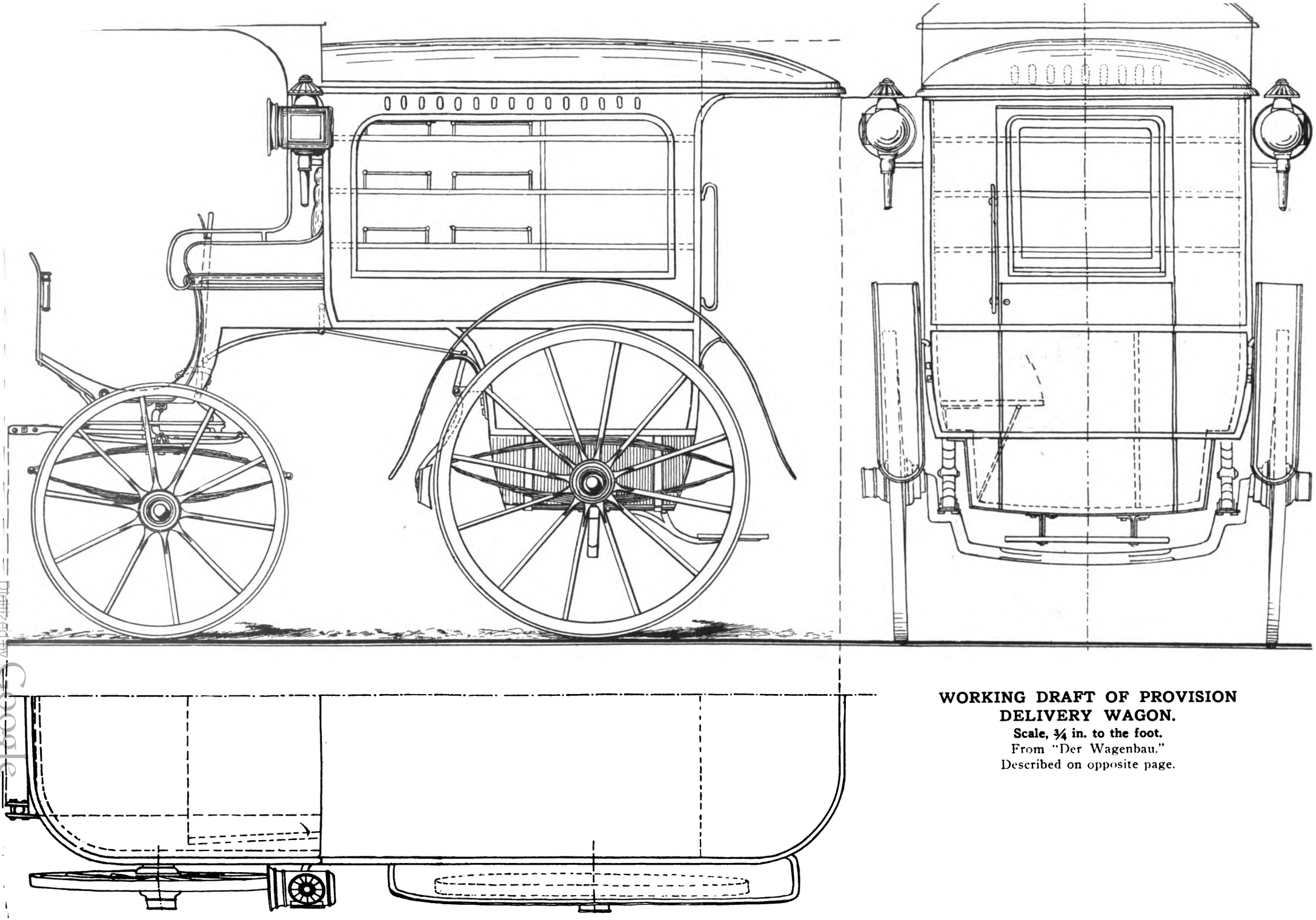


Buckboard with Automobile Seat.
Built by Borough & Blood Buggy Co., Marshall, Mich.



Open Surrey with Automobile Seats.
Built by Lull Carriage Co., Kalamazoo, Mich.

Digitized by Google



WORKING DRAFT OF PROVISION DELIVERY WAGON.

Scale, ¾ in. to the foot.

From "Der Wagenbau."

Described on opposite page.

Digitized by Google

Wood-working and Smithing

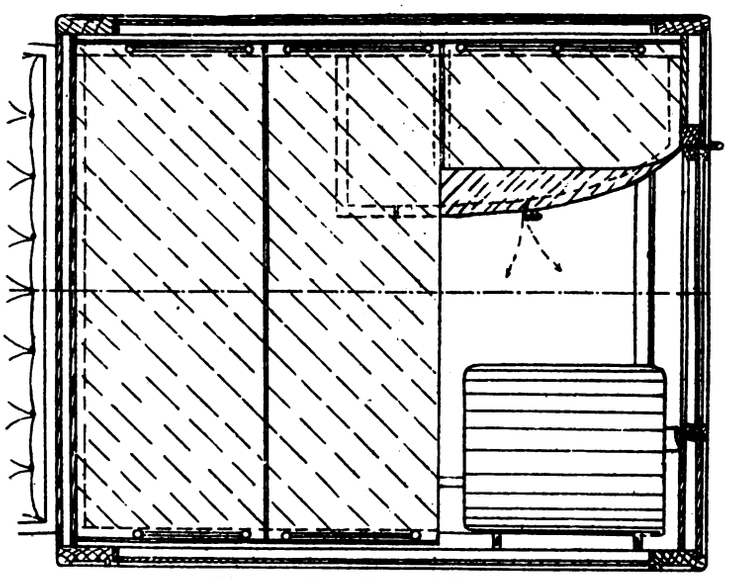
DESCRIPTION OF WORKING DRAFT OF PROVISION DELIVERY WAGON.

Drawing on opposite page.

The wagon illustrated on preceding page is built for the retail delivery of meat and its by-products. It is built to be drawn by one horse, being especially light in construction. The body is plain, although the rear panels are provided with a large plate glass mirror, which is lettered to suit the owner.

The inside is provided with four shelves, which are placed crosswise of body, from side to side. On the right side of body at rear end the shelves extend to the back, as shown in plan on this page. The seat at rear is secured to left side of body and is made to fold up, providing more room. Opposite this seat there will be found a refrigerator which, of course, it is only necessary to use during the summer months.

The salesman need not leave his wagon when serving customers



Plan of Rear End of Body.

as anything desired is within easy reach from front or rear. The meat is hung from the roof of the wagon. Light nickel-plated rails are fastened to the outer edges of the shelf boards to protect the plate-glass mirrors from breakage. These boards, as well as the inside of body with which the provisions would come in contact, are provided with white enameled zinc, which is the most sanitary arrangement.

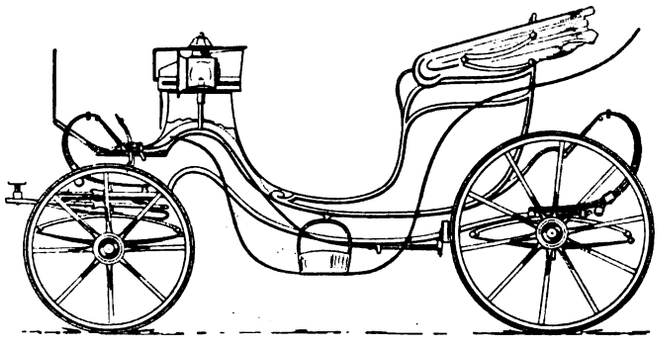
At the sides of body near roof and at top of door means are provided for ventilation. These ventilators may be opened or closed at will. The door is provided with a special lock.

Dimensions of body and gear are: Length of body over all, 9 ft. 8 in.; depth of section back of driver's seat, outside, 4 ft. 7 in.; width across outside, 4 ft.; door, 25 in. wide. Wheels are 37½ in. and 45½ in. Track is 4 ft. 8 in. and wheel base, 5 ft. 3 in. Suspension is on four elliptic springs. Front are 37½ in. long and have four 1¾ in. plates. Rear are 43½ in. long and have five plates 1¾ in. wide. Axles are collinge style, 1⅜ in. front and 1⅝ in. rear.

Painting: Body is carmine, striped with black and gold. The lettering which may be placed on glass sides should be in gold with black shading. Gear is red striped with light red and black. The driver's seat is plain red leather. Rails and lamps are nickel plated.

AN IMPROVED CARRIAGE BRAKE.

We present to our readers in this article one of the latest improved English carriage brakes, the "Worger-Bowden Patent Brake." The "Bowden" brake has become the standard brake

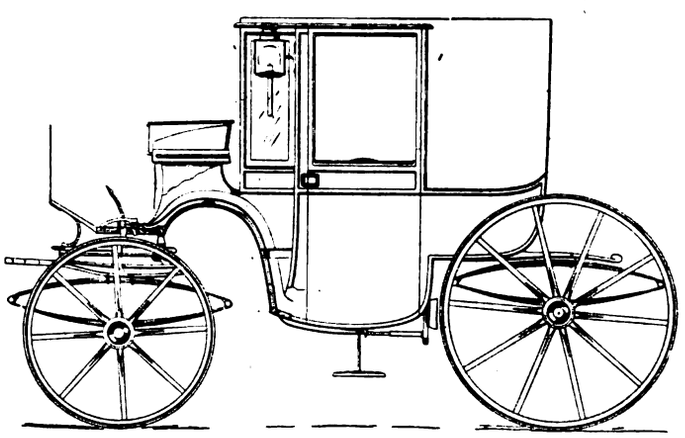


for bicycles in England and the Worger-Bowden brake is an adaptation of the principle to road carriages. Mr. Worger being a practical carriage builder has worked the brake out to be applicable to carriages, and as he is a London builder of high-class carriages and of repute it is presumable that the brake has answered all the advantages claimed for it.

It is a foot brake worked direct to the arms with a steel cord, which is located in a tube so that every objectionable fitting to the outline of a carriage is worked out of sight, while the effectiveness of the brake is equal to the outside lever brake.

Two drawings are given here with the brake attached. In the brougham the fittings are worked from the inside of the boot and are, therefore, concealed. In the C-spring victoria the tube is fixed in the inside of the boot, while the cord passes through the bottom of the body, a slot being cut for that purpose. It will be seen that the invention is thoroughly applicable to C-spring carriages suspended on perch underworks, as well as to those usually hung upon elliptic springs, as in the brougham.

Mr. Worger gives the following directions in fitting the brake to a brougham or victoria. These directions are instructive in determining the fulcrums of the arms of any brake other than



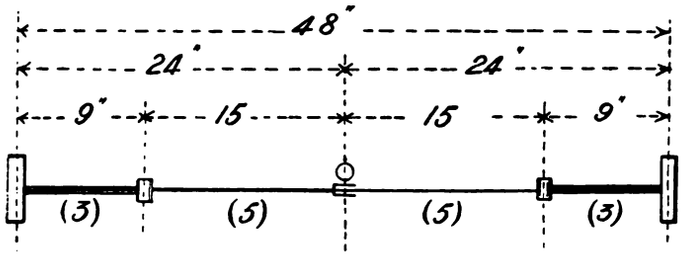
the one they are specialized for; they will therefore be instructive to those seeking information on the fitting up of brakes of this kind. The Worger-Bowden brake is a decided advance in this kind of mechanical retarder for carriages.

Method of Fitting to Brougham, Victoria, Etc.

Bolt foot lever to the front bottom, either in the middle or side as preferred. Measure the centers of the wheels at tires where

Digitized by Google

the brake block is to be applied, bore on fulcrums and shut up the brake arms in proportion 5 : 3. The foot lever being in the proportion of 3 : 1 gives an advantage at the block of five times.



The diagram accompanying illustrates the proceeding for hanging a brake of this character.

The Worger-Bowden brake is patented in England, the address being, P. T. Worger, carriage builder, 28 Palace St., Westminster, London S. W.

NEW DEPARTURE IN LOW-DOWN DELIVERY WAGONS.

Drawing on following page.

To produce a low-down delivery wagon for general use has been the aim of many able carriage and wagon builders throughout the country. Not only the aim of the mechanic, but the desire or wish of those who do the delivering. Many types of vehicles have been produced, many of which have reflected much credit on the inventor and builder. To date there has been nothing, within the writer's memory or knowledge, which has been the acme of perfection. If they were low enough, too much territory was required to make a turn. Again, those which would turn all right were up too high. Carts with cranked axles were tried only to be abandoned. One rather ostentatious concern had a delivery vehicle built after the pattern of the hansom cab. while the driver was clambering down from his lofty perch and getting back again the man with the ordinary every-day delivery wagon was through with his morning's work.

The writer had often seen the many productions calculated to perform the requirements, nearly all of which fell short of the direct aim. The design here presented is intended to overcome all the disadvantages of its predecessors. It will turn within the square of its own length and can be brought down as low as desired, and there is no climbing to mount or dismount. Easy to load and easy to handle in every particular required of it, and is also simple and easy of construction.

Fig. 1 represents the side elevation of body and gear, showing method of suspension which produces the new order of low-downs. A is the bottom bolster, which should be well bolted to the cross-bars of body. This bolster extends about four or five inches beyond front of axle and beneath it, with a thin plate between the two to prevent wear. It must be made of a piece of hard oak. B represents the upper bolster, which is framed into the body, and is further secured by means of a U-shaped plate, D, which is bolted to front of body with extending arms on underside of bolster B, and top side of bolster A and stay or brace E. This bolster extends forward the same distance as the lower one. To its front end the upper fifth wheel plate is bolted and the king bolt, C, passes through it and the lower bolster, as shown in drawing.

The fifth wheel plates, which have lugs and stops, will be described and illustrated further on. As will be observed, duplex elliptic springs are used, which rest upon lugs forged to center of axle. The uppper part of springs are bolted to the lower fifth wheel plate, with a wooden block intervening. The springs, axle and lower fifth wheel plate are secured together and swing, as a whole, with the king bolt as the pivoting point, when the vehicle makes a turn.

Fig. 2 is half elevation of front, showing ends of bolsters, spring, fifth wheels, etc. Fig. 3 is the plan, which shows location of stop on fifth wheel and position of wheel when in locked position. The front wheels are 3 ft. in diameter and the track of front is 4 ft. Rear wheels are 4 ft. 2 in., and axle is cranked. The body is made with a sliding door and the glass front is hinged at the top and raises to the roof.

Fig. 4 illustrates the upper and lower fifth wheel plates, which are made of ½ in. iron plates and are 10 in. in diameter. F is the under side of upper plate and G the bottom side of lower plate. H is a lug or ear turned down at the front of the wheel to prevent forging ahead because of wear of kingbolt. The four small

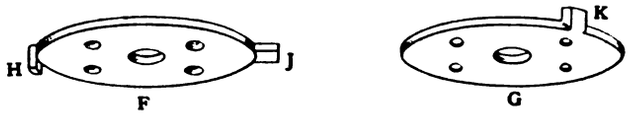


Fig. 4

countersunk holes are for securing plate to bolster, while the larger one is for kingbolt. J is a lug at the rear which acts as a stopper and against which lug K strikes when making a turn. The lower plate, G, is also provided with four small holes. These are for securing springs to and are countersunk at the top.

In operation the axle slides up and down on the kingbolt as the spring yields to the weight placed upon it. The axle is forged wide to allow for hole through its center and has lugs on each side for springs.

FOREST OWNERS ORGANIZE TO FIGHT FIRE.

One of the most important economic movements of the day about which the general public has yet learned little is the concerted action of owners of timber in different parts of the country in organizing associations to protect their holdings from fire. In the Pacific Northwest, the Washington Forest Fire Association has just elected officers at Seattle and begun work for the year with 3,000,000 acres under its care. The plans include a system of patrol by rangers resembling the work done by the United States Forest Service in guarding against and extinguishing fires.

Organizations of similar kind and for a like purpose are at work in Oregon and Idaho. In the latter State a portion of the expense is borne by taxation and paid from the State treasury. A Western railroad company which holds large tracts of timber has taken steps to guard its property from fire, and during the short time that its plans have been in operation, it has met with most encouraging success.

Similar work is being done on the other side of the continent. Forest owners in Maine have gone to work in the same systematic way to control the forests' great enemy, fire. Like organizations are found in other parts of the country, showing how fully it is now realized that protection against fire is of the greatest importance.

It is safe to say that fires in this country have destroyed more timber than lumbermen have cut. When timber was abundant, the waste passed almost unnoticed, but now that a scarcity is at hand and an actual wood famine threatens in the near future, the owners of forest lands are waking up and taking action to save what is left.

PLAN TO MAKE FARM WAGONS.

The Kennedy-Walker Land and Development Company, of Kenbridge, Va., plans the organization of a company capitalized at $50,000 to establish a plant for manufacturing farm wagons.

Yes, the amount of stuff you get through a machine counts for something, but at times the amount it is worth after it comes through is the main thing.

Digitized by Google

COLOR ECONOMIES.

The necessity of making "both ends meet" was never more apparent than now, and possibly it can in no way be better accomplished than by saving here a little and there a little in the daily handling and use of colors. Ordinarily, and even under what passes as acceptable shop management, there is a certain and well defined waste of pigment. To rid the shop of all waste along this line or along any line would unquestionably be impossible, or at any rate not wholly desirable, for while pottering over trivialities in material the cost of labor would inevitably transcend the value of the resultant economy. It would, to use a common figure of speech, be saving at the spiggot and wasting at the bung-hole. But upon the shelves of most there exists, we believe, an opportunity to stop some leaks which are going on without resorting to any extravagance in labor.

Color pots and cups set away upon the shelves by this workman and that, partially filled with pigment and left to dry up, "skin over" or "liver" to a mass in the bottom of the dish is one of the ways, and a direct and important one withal, which develops a disastrous source of waste.

In the large shops an employe is usually in charge of the stock and among his duties is that of mixing and making ready for use such supplies as are called for by the painters. To such establishments the above strictures do not apply. In the great majority of shops, however, no such arrangement prevails, and in not a few shops the workmen indiscriminately mix their individual supplies when wanted. Perhaps for the patching up of a color on a repaired wheel, or a body, or some part thereof, the painter mixes largely in excess of actual needs, and having finished the work thrusts the dish and its immersed contents onto the shelf, there to rapidly degenerate to a practically worthless condition.

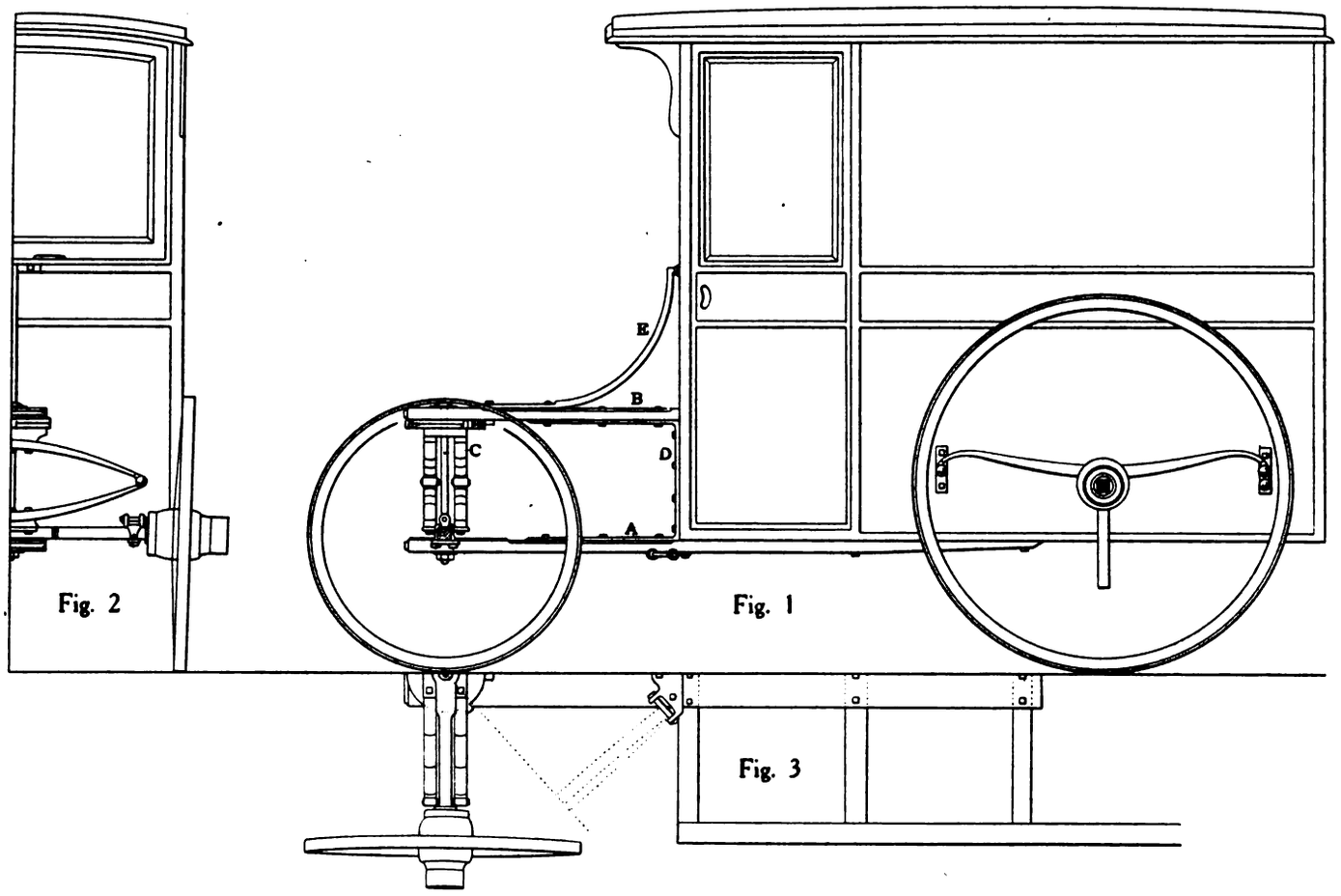
Thus daily are these examples repeated to the ever increasing multitude of sore and distressed looking cups, cans, pots and kettles elbowing one another upon the shop shelves. Gummy atoms of the plebeian yellow ochre, puddles of resinous Venetian red, humble browns, and the commonest greens, find themselves associating with pigments of royal vintage costing all the way from $1 to $5 per pound.

And then, alas! some day, for some special job, this miscellaneous jumble of colors is swept unceremoniously into the mixing pot for the compounding of the desired pigment, the $5 No. 40 carmine, or the equally expensive English crimson lake, uniting its satiny atoms with the coarse-faced red or yellow in the making of the hodge podge mess.

The moral is self-evident. Color economies consist in an exact reversal of all the things intimated above. You have heard lately about the roll-top desk going out of use in a certain great business house because it contains pigeon holes for the accumulation of deferred business. If the paint shop shelves are to serve chiefly for the housing of color remnants then such shelves had best begone with the roll-top desk, for color left-overs are a greater menace to the prosperity of the carriage paint shop than numerous other matters flaunting formidable names.

No color of a special character should be mixed in excess of daily needs, and more important still, no color should be left exposed to the air on the shop shelf, mixed or otherwise, for an hour. Finally, no shop is so small that it can afford to have more than one color mixer.

Good we do to others is doubled in ourselves; likewise the evil.



New Departure in Low-Down Delivery Wagons.

Description on preceding page.

Digitized by Google

PAINTING AND UPHOLSTERING

TO TOUCH UP AND VARNISH A LANDAU CHEAPLY AND ECONOMICALLY.

On a job of this kind being given to a painter, when the carriage has been taken all apart and ready for him to start on, first of all it should be thoroughly cleaned up and all the grease removed from the fifth wheel and undercarriage. The bare parts in the wood and iron being neatly sandpapered to a level surface, then pick out and level all loose joints, scrape the spring edges and touch them all in with lead color. All the under gearing should be served in the same way.

This is done first so that no water may get into bare parts of the wood or on bare iron in the subsequent flattening with pumice powder and water which is the next thing to be done. Everything should be thoroughly done subsequent to a good flat, and in this way getting rid of all grease and other impurities which would in the least injure the coats of varnish which are to follow, and in all probability cause trouble.

Flattening thoroughly, without cutting through, is of course what would be expected of a workman who understood his work and had his heart in it. Flattening is of so much importance in getting up a rich surface on the coats of varnish that are to follow, that it is necessary to lay heavy stress upon it here. All bare places, joints and other inequalities which require stopper and putty should at this stage be seen to and the stopper, when dry, faced down level. The putty used in the body should be made with japan and the parts dark lead colored.

The body having been thoroughly well flatted, it is now ready to be touched up in color parts to match, and in any narrow black parts, but should the panels of the body be gone below the level of allowing a thorough flat they should be given a coat of glaze and the whole body a thin coat of hard-drying body varnish.

The boot and other japanned parts may be in good condition, but shady, in which case it is better to give them a coat of japan and two coats of varnish with the body.

The rims of the wheels should be carefully dressed off and lead colored, and the same with the undergearing where it is necessary, then all carefully flatted down, the lead-colored parts leveled with sandpaper and puttied up.

All parts are now ready to be touched in with color to match. The rims of the wheels should be carefully done, both in color and varnish color. The whole job is now ready to line out and finish up in varnishing. In touching up jobs the great thing is to match color correctly, as well as to do the job in a workmanlike way and to leave no traces of patching in color parts, but to turn the work out of hand with the impress of a painted job is the highest art in touching up and revarnishing high-class carriage building.

In this class of work it is sought to brighten up a job without going to serious expense. Also to meet the pocket of customers who cannot afford much outlay, and again, to treat the revarnishing of a stamp of carriage used for a special calling, and far removed from the rank of first-class work, by a quick and economical method of touching up and revarnishing. In this case all the bare places on wood and iron are cleaned and leveled off with sandpaper and touched in with dark lead color—not light—because in touching up colors do not cover so well on light lead color.

The body should now be flatted down as much as the surface condition will allow, and puttied up where necessary, and touched in all around with quick color to match. Black parts should also be touched where required in dead black.

If the sides of springs are rusty they should be cleaned with an old file and sandpaper all around in the underworks, and they, with the other parts, dressed off nicely and given a coat of dark lead color. The rims and bare parts of the wheels should also be treated in this way, then all flatted down and puttied up where required, and touched up in quick color to match, and then varnish colored. Then damped down and lined out. All damaged lines should be touched up and connected to match. The whole job can now be given a full coat of finishing varnish, which will make a satisfactory job of the whole in the grade of work it is classed in.

ON MIXING FINE LINING COLORS.

Lining colors of all descriptions, in general shop practice, are mixed and ground stiff in a composite of half drying varnish and gold size, and made workable on the jalette by the lining pencil and enough turpentine to make them run well.

Lining colors made in this way are quick drying, which is the main object, as in most cases they have to be varnished the same day, and sometimes within a couple of hours of their being put on.

All chromes being light in weight, run very well mixed in this way. But white, being a heavy color, mostly dry white lead and a good drier, to make it run well it should be bound in hard drying varnish with a small portion of finishing body varnish. If this be used in the ordinary way, with turpentine as a releaser, it will be found to both run well and dry hard enough to varnish in one hour. A picking-out line of white should be run over twice to make it solid, once on the hard drying, and varnished on the first coat of varnish, then when flatted down run over again and varnished in the finishing, so that the white only receives one coat of varnish on the surface of the finished white. If the two coats of varnish were put on the white would be discolored and to an extent kill the brilliancy of its purity. All colors sweat up in the varnish and affect the tone of a white more quickly than others which absorb their bases without apparently altering their shade. A black on japan ground should always be varnished if the job is to be lined out in white, because japan sweats up more than varnish, and in the case of white picking-out if done on the japan itself it would eat right through the color. It is therefore the right thing to do to varnish the japanned gearing and pick out with two coats of white and finish with last coat of varnish.

Red is a very heavy color and is always inclined to run down and sag but it will be found to go all right if bound in hard drying varnish and gold size, and run with turpentine in the ordinary way. Much, however, depends upon a workman himself, because a good man knows in a minute whether his color is all right. But it must not be forgotten that it takes years of hard practical experience to gain this knowledge.

As regards oil colors, they are not much used in the trade now. They do not dry quick enough for present-day demands. While in lining a wheel or underworks too much risk is open through the tendency of the color to run and smear, which means time in wiping off and would hardly be tolerated nowadays in the great majority of shops.

The quicker method of striping in quick colors does not allow of the color running so smoothly as those ground in oil, while oil colors are purer in tone, but of course they take longer to dry.

Quick colors, when they drag on the pencil and become sluggish, are released to a smoother train when a drop of linseed oil is added to them. At the same time, it is of equal importance that the painter should use the best pencils in picking out and finishing his work.

Chromes are light in weight and offer little difficulties as quick colors, if bound as explained herein.

Digitized by Google

SIZE OF THE FINISHING BRUSH.

Apparently the unwritten law of the carriage paint shop prescribe the 2½ inch varnish brush, and particularly the finishing brush, as the maximum width, whereas if all the issues were to to be mustered into review the 3 inch, and even larger, brush would invoke attention.

An expert finisher once asserted in the hearing of the writer that the lack of really high-class body finishers was then—and we have no reason to suspect a changed condition since—due to the disinclination on the part of varnishers to make use of anything larger than the 2 inch brush. No definite reason for this appears other than that the custom seems to lurch up out of the far past and grip men in its embrace through sheer force of tradition. And what bugaboos those traditions, mysterious with age and their half-forgotten memories, more often than not prove to be, after all! But from the practical standpoint there is no logical excuse for adhering to the 2 inch brush in varnishing the wide, sweeping panels encountered upon landaus, broughams, paneled top wagons and the like. For the small panels you use the 1 inch and the 1½ inch brush naturally enough. Why not make varnishing easy, and the labor of getting the rich body of material to the surface quicker by using the 3 inch and the 3½ inch brush for the correspondingly larger panels? Make your brush, in size, fit the surface and thereby confer a measure of simplicity and easy effort upon a pre-eminently skilled department of work.

ULTRAMARINE BLUE.

This pigment is alike chilly and admirable. By reason of the latter, despite the former, it retains popularity under the weight of years. The definition of ultramarine blue, as given by a practical man, would read about as follows: A blue glass produced by roasting in a crucible clay, silica, soda and sulphur. The ultramarine is then ground as fine as possible—the finer the better, always. There is this peculiarity about the blue, viz., should any of the above ingredients be lacking the pigment would fail in its distinctive color properties. In other words, four ingredients are absolutely essential to the perfect development of the blue. The blue is permanent under practically all conditions. Especially is it unsusceptible to the effects of light, an advantage it possesses over a great many of the modern fashionable colors. Moreover, it is the most available blue at the disposal of the carriage painter, taking everything into consideration. Dark brown or black makes an excellent ground for ultramarine blue, save when an unusually light shade is desired. Having brought the ground up strong and clean, lay on a coat of the ultramarine mixed to dry flat. Then to elastic rubbing varnish add a stain of the blue, and flow this above the flat color to its wonderful and splendid enrichment. This, in brief, is the method of producing a surface of ultramarine blue.

A LITTLE MATTER OF USING LAKE COATS.

There is something like a quarter of a hundred of lakes, all very beautiful and alike delicate, and more or less difficult to use successfully, which the necessities of modern carriage and wagon painting call into frequent employment. To employ these pigments with the greatest economy, and at the same time secure the finest possible results, should be the object of the painter.

The ground for these lakes, by virtue of the delicacy of their nature, as already spoken of, must be as secure and as satiny of surface texture as the best skill is capable of producing. What the conditions leading up to such a ground are, The Hub, in former issues has specified and they need not, therefore, be here repeated.

The final coat of pigment preceding the glazing coat itself should be mixed to dry flat, i. e., without gloss. And that coat, whether No. 40 carmine, crimson lake, Munich lake, or any other member of the lake family is being worked for, should be made of the lake itself and used, as above stated, flat. This is the latest practice and the best.

Then in the preparation of the final or glaze coat of lake, add to an elastic rubbing varnish preferably just enough pigment to stain the varnish. This gives the necessary enrichment to the preparation coat and lends the required brilliancy to the surface as a whole.

BRUSHES FOR RUNNING PARTS.

The most available, because the most economical and easiest handled tool, for laying on varnish color, barring, of course, glazing colors, for running parts, is the 1½ in. camel's hair flat brush. Such a brush, of good quality, is just elastic enough to spread and flow a clean, round coat of material, and additionally it has life and poise which is a valuable asset of any brush. With a proper flowing color and varnish you can use the camel's hair brush and secure a more solid and nicer slicked up coat than with the coarse bristle affairs which a former generation struggled with to its not infrequent undoing.

For applying glaze coats a 1½ in. badger hair brush is most generally used, largely, no doubt, because the greater body of varnish in proportion to pigment can be more effectually handled under the badger hair stock than under the softer stock of the camel's hair tool.

In the clear varnishing, and in the finishing of running parts, the badger hair, 1½ in. width, lends itself with great success and effectiveness. It is an excellently well balanced brush, with an elastic stock, poise, hang and a quality for perfect control quite unsurpassed by other brushes.

Coming to the running parts of the large business wagons the oval brushes of soft, elastic bristles are to be preferred solely on account of their greater varnish carrying capacity. Otherwise they have positively no advantage over the badger hair brush.

THE LYE VAT IN THE PAINT SHOP.

When business gets into its full stride in the spring you may not possibly have the time to brush and scrub and thoroughly clean out every night the color cups, varnish pails and such other receptacles as you under ordinary trade conditions may find time to do. Moreover, there is a constant and by no means insignificant loss of turpentine by this system of cleaning, and these little losses in a product costing, say, 60 or 70 cents a gallon, totals up amazingly in the course of a few months. And despite this daily cleaning with turpentine the cups and pails presently get gummy and fail to handle nicely.

Instead of the above why not try a less expensive plan, and quite as effective in cleaning power? To start with, cut the top from a five-gallon varnish can, or if easier, unsolder it. Into the can pour four gallons of clean water and into the water drop one-half pound of potash.

At the end of the day drop the cups and pails into the lye, removing them the following morning, and after rinsing them off in clean water they will be found spick and clean. If a half dozen dishes are daily submerged in the fluid it will be necessary to change the contents twice a month in order to maintain the medium at its proper strength.

FILLING THE WOOD.

There is a promise that the coming season, preparations for which are now well under way, will witness a strong array of natural wood finished carriages, and it behooves the painter to study up along this line somewhat. The chief requisite in natural wood finishing is in filling the wood properly. All other processes hinge upon this. Preferably we should use a ready prepared mineral paste filler of good quality. If, however, shop mixed, stir No. 1 sielex into equal parts of raw linseed oil, turpentine and coach japan, giving the filler color, if desired, with the siennas. Run through the shop mill to insure thorough in-

Digitized by Google

corporation of ingredients. Apply with a stout brush with short stock, or moderately so. Let the filler set until it partakes of a white, floury condition.

Right here, we may say, is the critical stage of the work. If wiped off too soon the pigment is swept out of the grain of the wood, and there is no filling, technically. Rub the filler off with a tuft of tow. The tow is better than excelsior in that it does not tear the pigment out, but on the contrary, tends to force it into the grain. After wiping the surplus filler from the surface stand aside for ten hours at least before varnishing. If the surface is varnished over prematurely or before the filler becomes hard, expansion of the material is likely to follow, in which case a fracture of the varnish film is bound to ensue. Having the surface perfectly filled and first coated with varnish, a sure start is secured, and the later processes may be rated comparatively easy.

A WATER TOOL WORTH WHILE.

Next in importance to a fine varnish brush an excellent water tool holds place. Not a few of the water tools bought of the brush supply houses are wild, floppy, and, in a measure, uncontrollable brushes with scarcely enough point or substance to them to unseat the ordinary accumulations from the easiest sections of a carriage body. Even when bridled, many of these tools remain for a long time unsatisfactory.

One that doesn't cost much and is effective from the start may be made from a 1 in. badger hair varnish brush. Having used one of these brushes until it is pretty well worn down, proceed to trim off the rough and perhaps uneven working edge until it becomes shapely. Next immerse it in turpentine and wash in same until the resinous and gummy substances have been removed. Having accomplished this, the tool may at once be broken in for washing up purposes. Accumulations stuck under molding and in crevices difficult of access may be started loose with this badger hair tool in short order, and at a decided saving of labor.

In fact, this shop-made water tool is in all respects a good one, not a makeshift, and while it is better adapted for bodies than for running parts it will nevertheless be found useful upon the latter.

TO TRIM A CLOSED-TOP UNDERTAKER'S CALL WAGON.

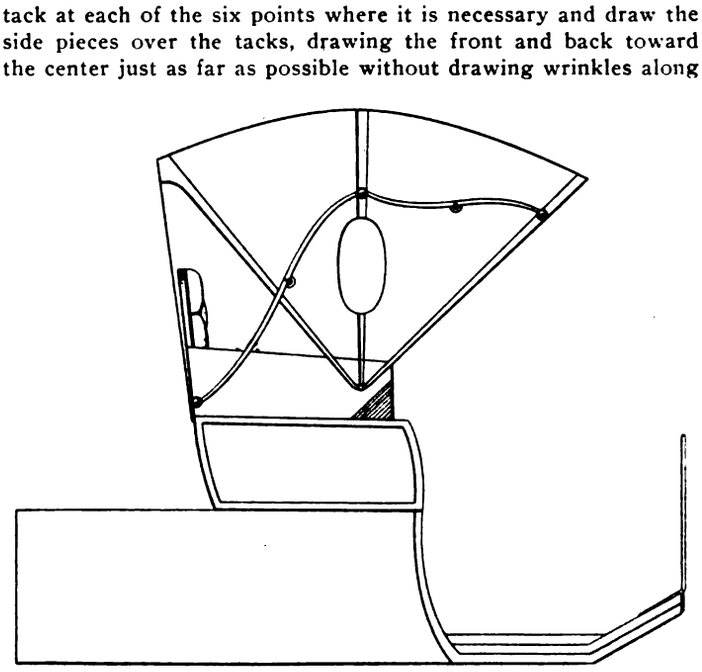
Illustrations accompanying.

The method of trimming an undertaker's call wagon or embalmer's wagon, having a closed top and phaeton style of seat, which is a very popular and also convenient style seat to fix a closed top to, is as follows:

Set the center bow with 45½ in. headroom and allow 49 in. for length of head. Drop front bow 8 in. and back bow 4 in., flare back 2¾ in. at the center. The bows, which are full length, all wood, and the slat irons, are placed on the inside of same, the back slat iron extending well above the point where bow comes in contact with back prop rest. Cut the center bow and splice it to the glass frame and reinforce with two iron braces which are screwed to the inside surface of bow. The joints are curved, care being exercised not to allow the knuckle to come above the straight line from center to center of props.

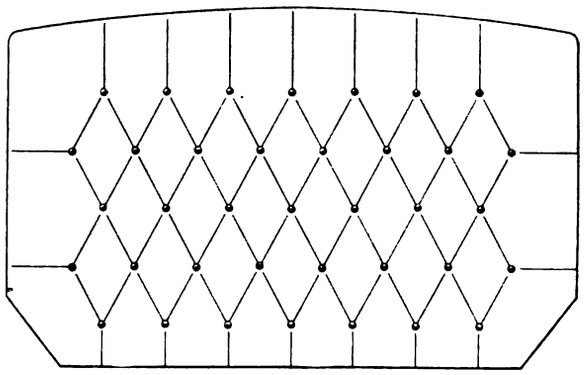
The back bow can be prepared as follows: Glue a piece to the back surface of the rear bow extending down the bend at each side far enough to form a corner. It is well, also, to glue a beveled piece to the underside of bow running out to a thin edge at the back and thick enough at the front to prevent interference with head lining. Work out in such a manner that a corner will be formed at points on the bow perpendicular to seat corners. It is important that these corners be not too far from the outside line of side-quarters, as it will be found difficult to draw out the fullness in the quarter near the top. This, however, can be averted by narrowing the bows up a little as the back is reached. If necessary, let the center bow be ½ in. narrower than the front one and the rear bow ½ in. narrower than the center one. This amount of cheat will not be perceived or interfere with the operation of top.

The head lining is cut in three pieces and seamed up with a welt in under seams of the leather. To fit head lining drive a tack at each of the six points where it is necessary and draw the side pieces over the tacks, drawing the front and back toward the center just as far as possible without drawing wrinkles along



the line of seam marks. At each of the tacks draw straight lines from mark to mark. Fit the top piece in the same manner and then seam up.

The back stays are pasted up with steel stays inserted. One edge is pasted down and a cloth cord welt-sewed to the inside edges of stays. A good plan is to loosen the outer edges of the leather and sew on, by hand, through one thickness of top leather. The side quarters must have top leather and cloth pasted on for cord pieces and be bound to top prop block, or they may be fastened to the seat with half-round silver mouldings. The wide slat irons should be left on until leather is drawn on and joints are in place, and back stays should be drawn up tightly. The long joints are given ¼ in. set, which will keep the head lining



and the padding tight. Cut front valance out of harness leather and cover with collar leather. Fit the back curtain and make it up in the usual manner, using collar leather buckles and loops.

The side lights, which are oval, are fitted rather loosely. Let the frame be ⅛ in. larger all around than the glass frame, and rounded off ¼ in. deep. The glass frame will extend but little beyond the surface of the leather.

The bows are padded to prevent wear and stretch of head lining. At the sides, from rear bow to seat risers, tack strips of webbing and a piece of enamel duck. This will help to keep the bow back in place and also keep the leather from sinking in around the curves of the bow and prevent the rear bow from showing.

Digitized by Google

General Topics of Interest to Trade

Week of October 11th

IS TIME SET FOR NEXT CONVENTION AND EXHIBITION OF C. B. N. A.

First Regiment Armory in Chicago Has Been Secured for Business Meetings and Exhibition.

Secretary Henry C. McLear, of the Carriage Builders' National Association, makes the following announcement regarding the convention and exhibition of that body:

The thirty-sixth annual convention of the Carriage Builders' National Association will be held in Chicago, Ill., during the week commencing October 11, 1908.

The exhibition will be held from October 12th to 17th, inclusive, and the convention on October 13th, 14th and 15th.

We will have fine accommodations, both for the exhibition and the business meetings, in the Armory of the First Regiment, Illinois National Guard, so these important affairs will be in the same building.

We expect a large and fine exhibition and some good adresses this year, and hope our members will all arrange to be present.

DATE SET FOR DEALERS' SHOW IN NEW YORK.

The annual exhibition of finished carriages will be held as usual this fall in the Grand Central Palace, New York City, and the date set for this event is October 5th to 10th, Monday to Saturday, inclusive.

J. B. BREWSTER & CO. FAIL.

J. B. Brewster & Co., of New York City, went into bankruptcy May 7th. The factory is located at 215 East Forty-fourth St., and the warerooms and offices at Forty-ninth St. and Seventh Ave. It is a joint stock association, the three members being Cairn Cross Downey, Harry M. Duncan and Geo. M. White. The right to the use of the name "J. B. Brewster & Co." has long been disputed by Brewster & Co., of Forty-seventh St. and Broadway, also known as "Brewster & Co., of Broome St.," and the matter has been before the courts for some time. None of the Brewster family is connected with the institution which failed. The liabilities amount to $40,000.

VISITOR FROM AUSTRIA.

We recently received a visit from George Weigl, of Prerau, Austria, whose father is the largest manufacturer of carriages and carriage wheels in that country, with branch houses at Vienna and London, and who has been a subscriber to The Hub for over twenty years. Mr. Wiegl will spend two months in this country, and the object of his visit is to study American methods of coach building and wheel and spoke manufacturing.

The plant of the firm which Mr. Wiegl represents is equipped throughout with the latest special machinery of American make used in the construction of carriages and wheels, and is in position to meet any competition in Europe. In adopting American methods of manufacturing it is anticipated that this superiority will be increased in a great measure.

Mr. Wiegl is now in the West and will visit the factories of the leading carriage and wheel manufacturers, and also some of the large manufactories of wood-working machinery.

APRIL MEETING OF CARRIAGE MAKERS' CLUB.

On the evening of April 9th, fifty-seven members of the Cincinnati Carriage Makers' Club, one guest and one member of the press, partook of a supper at the Grand Hotel, that city, after which President Brown called the regular monthly meeting to order. The minutes of the previous meeting were read and accepted. In the absence of A. G. Brunsman, chairman of the Freight and Classification Committee, Theodore Luth reported. He said that the committee had been very active, accomplishing good results in securing favorable changes in vehicle crating specifications of benefit to shippers in Cincinnati and elsewhere. Other changes and concessions from the railroads were still needed, he said, referring to the regulations of Western lines making a minimum rate of 28,000 pounds per car. It is against the interests of shippers in Cincinnati loading only vehicles and increases the cost of transportation in all directions some 40 per cent. To Western manufacturers who ship mixed carloads of farm wagons and vehicles the cost is much less than from Cincinnati, where none or very few wagons are manufactured. It is a problem to solve of serious importance.

E. M. Galbraith, of the Entertainment Committee, gave evidence of the committee's activity in the arrangements made for the past monthly meetings and summer outing, on which occasions a variety of entertainments were provided which proved very pleasing and added to the interest of the several gatherings of the club held during the past year.

There was no report received from the chairman of the Labor Committee, Mr. Hunter being absent from the city. As far as known the conditions have been very favorable to the industry in Cincinnati since last November. The report of the Press Committee was very brief. Chairman Shipley, of the Legislation Committee, was absent. However, the committee is still at work aiding the Receivers' and Shippers' Association to seek desirable changes in the organization of the Board of Trustees of the Cincinnati Southern Railroad. O. E. Walker, chairman of the Good Roads Committee, referred to many improvements in progress on the streets of the city and suburban roads.

Retiring Secretary H. S. Coxe and Treasurer Jason Schneider made reports showing large membership and good financial condition of the club. The retiring president, George S. Brown, made a brief report, telling of the pleasure his position had given him and thanking the club for the kind and courteous support shown him and the chairmen of the various committee for aiding them in the discharge of their responsible duties, which resulted in the growth of the club. He closed with a few kind words, introducing the new president of the Board of Governors, Otto Armleder, who extended his thanks for the support given him and his associates at the election.

The newly elected president, Mr. Armleder, is a gentleman in the very prime of life, who is always courteous and agreeable with all who meet him. He is also president of the Otto Armleder Company, carriage builders of Cincinnati, in which capacity he has been very successful in building up a very large trade. The same energy, enterprise and earnest effort will, no doubt, go with him in placing the Carriage Makers' Club on a much higher plane.

Fifteen new members were received into the club. They are: A. T. Wishart, Geo. B. Wheelock, Ira D. Washburn, C. W. Steele, Geo. M. Stearns, W. P. Nolan, Harry S. Levison, Walter Lang, P. Herrlinger, David B. Gibson, T. F. Foley, Wm. Engelke, John Doyle, Chas. C. Cargill and G. W. Ansted. The resignations of W. R. Caney and Wm. Knapp were received and accepted. The Board of Governors will confer with the Entertainment Committee in making plans for the June outing.

Digitized by Google

OBSERVATIONS OF AN AUSTRALIAN.

In the Making of Motor Bodies, He Says, the Art of the Coachmaker Has Reached Its Highest Point.

Mr. Herbert Binnie, of the firm of R. & H. Binnie, of Sydney, Australia, recently returned home after an extensive tour of the United States and England. The occasion of Mr. Binnie's visit to the United States, says the Australasian Coachbuilder and Wheelwright, was the disquieting rumors which reached Australia some time since regarding the timber situation. Mr. Binnie visited the principal hickory tracts and got in touch with manufacturers on the spot. He was greatly impressed with the thoroughness of American manufacturing systems and the care in grading material. Manufacturers, he says, employ the very best machinery obtainable and specialize on sizes and styles. They control extensive timber tracts, and have enormous outputs. These enormous outputs, combined with the policy of specializing, give American manufacturers undoubted advantages. The control of timber supplies which enables them to get out all their stock greatly adds to the strength of their position.

In regard to the difficulty experienced in getting deliveries, Mr. Binnie says much of the trouble in the recent past has been due to temporary causes, such as floods and speculative control of timber areas, but undoubtedly many localities from which supplies of the best hickory used to be obtained have been denuded, thus forcing manufacturers to draw from less accessible parts. The situation, he says, is easier now. The possibility of getting deliveries is practically assured, but prices are not likely ever again to be so low as they have been.

Mr. Binnie spent about a month in the United States, during which time he had to keep moving pretty constantly to cover the enormous distances that separate the various points of interest.

Since Mr. Binnie's previous visit to England, made in 1899, the motor car has come into being. It is now a conspicuous figure in every prospect. The Olympia Motor Show, held in London in November, which he visited, contained a bewildering and impressive collection of self-propelled vehicles. The modern high-class chassis is a triumph of engineering skill, and in making motor car bodies the art of the coachmaker has reached its highest point. The exquisite taste and luxuriousness of some of the vehicles were almost beyond conception, and one of the most pleasing things about it, in Mr. Binnie's mind, was that it was the work of coach builders. English coach builders have gone into the motor car trade enthusiastically, and were doing well at it. Motorists bought the chassis that pleased them, and sent them to their regular coach builder to have bodies made. Mr. Binnie is hopeful that coach builders in Australia will make an effort to lead business in a similar direction. It is only the cheaper class of car that is built outright.

EDITION DE LUXE OF FARM WAGON CATALOGUE.

The Milburn Wagon Company, of Toledo, Ohio, has recently issued one of the most handsome and complete catalogues ever gotten out by a carriage or wagon manufacturer. It illustrates only the Milburn farm wagons and carts, and gears and parts which enter into their construction.

The book is 9 in. by 12 in. size and contains nearly one hundred pages of heavy coated paper. The body of the cover is printed in French gray with gold marginal lines. Along the top of cover design is a pretty panoramic view of the green country from the road, along which is driven a Milburn farm wagon loaded down with a group of farmer's children.

In the fore part of the book are shown three full-page views in half-tone color work of their factory buildings in Toledo, of their large saw mill and lumber sheds, and the enormous lumber yards in Toledo. About one-half of the pages contained in the book are devoted to the manufacture, illustrating and describing in detail all parts of the Milburn farm wagon, so that the dealer to whom these books are dedicated will clearly understand their construction, enabling him to talk intelligently about them to the prospective buyer. In the back part of the book are large half-tone illustrations of the various wagons built for farm use.

TRADE NEWS FROM INDIANAPOLIS AND OTHER PARTS OF INDIANA.

Indianapolis, Ind., May 4.—The buggy and carriage trade has been showing considerable improvement during the last month, especially out through the State. There have been numerous reports of successful spring openings where excellent sales have been made. The prospects for a large wheat crop have induced farmers to let go of their money more readily. In the cities and larger towns the vehicle trade has been somewhat slower, although showing gradual improvement over March and April.

Henry Haskell, of Haskell & Cook Bros., Fortville, died last month and the news of his death caused something of a shock to members of the vehicle trade. Mr. Haskell had been in business for more than twenty years.

Maxwell Oswell Parry, better known as Max to employes of the Parry Mfg. Co., of which his father, D. M. Parry, is president, won the annual Ten Eyck prize for speaking at Yale. Young Parry spends his summer vacations in the designing room of the factory.

The Pioneer Pole and Shaft Company recently resumed operations at Muncie after a shut down of some weeks, made necessary by improvements under way.

After June 1st the W. F. Williams Harness Mfg. Co., for many years located at 50 Monument Place, will be located at 7 West Market St., in the building recently vacated by the Indianapolis Star. They will have larger and better appointed quarters in the new location.

Harmon & Hall, who recently took the local agency for Studebaker vehicles, have added a line of Studebaker automobiles, thus making their first appearance in the role of automobile salesmen. So far they have only received samples of electric cars but expect to handle the full line.

The Winch Spoke Company has decided to re-locate at Branson, Mo., after having been in business for thirty years at Fort Wayne. The removal is made necessary by the growing scarcity of timber in this State. Articles of incorporation showing $20,000 capital stock have been filed in Missouri.

One of the most interesting bits of news in some time is the fact that the Kentucky Drill branch of the American Seeding Machine Company is to be combined with the Hoosier Drill branch at Richmond, thus making the largest factory owned by that concern. A. H. Rice, sales manager, Edward Christman, head of the experimental department, and E. H. Cureton, superintendent of the Kentucky plant, will all be associated with the Hoosier branch.

The Hercules Buggy Company has completed its new plant at Evansville, and is now running both night and day forces. About 200 jobs a day are being shipped out, most of which go to Chicago. The plant is a brick structure, costing about $20,000.

Automobiles are now being registered at the rate of about ten a day in Indiana. During April 39 automobiles and motor cycles were registered, the largest number in any one month since last summer. The demand this season is mostly for small, inexpensive runabouts and cars of the motor buggy type.

Leonard C. Rhoades, a prominent dealer at Rensselaer, was was married recently to Miss Ruth Harris, of that city, and immediately started on an Eastern wedding trip to last several weeks.

F. W. Weise, for several years a Cumberland dealer, has purchased a large block of stock in the newly organized Cumberland bank. He will devote much of his time in the future to the banking business.

Digitized by Google

THE NATIONAL HICKORY ASSOCIATION.

Report of the Annual Meeting Held in Cincinnati April 14th—Election of Officers.

The annual meeting of the National Hickory Association, held at Cincinnati, Ohio, at the Sinton Hotel, on April 14th, was by far the largest and most interesting held under the auspices of this association. The association, since its inception, has aroused public sentiment and interested the Government and secured its assistance in carrying out the objects of the organization. Those engaged in business which involves the manufacture or consumption of hickory are alive to the situation and understand that great activity must be exercised and that there must be an economical use of the remaining supply of hickory to insure against its entire destruction.

Secretary F. A. Curtis, of Chicago, made a report covering in a general way the work of the association, its objects, and what it has so far accomplished. This report said that practical measures had been taken to economize in the supply, and that organized bodies, such as the National Wagon Manufacturers' Association and the National Hardwood Lumber Association, jointly with representatives of the Forestry Service and the secretary of the National Hickory Association, had appointed committees who conferred on the matter of grading hickory vehicle products, such as axles, eveners, singletrees, neckyokes, bolsters, reaches, etc., with the idea in mind of using all the material that could possibliy be used, rather than of excluding all that could possibly be excluded; a standard of grades had been evolved which, it is calculated, will govern the production and consumption of these hickory products for all time to come, and while these grades have not been finally approved by the association, there is no doubt but they will be within the very near future.

The secretary reported that the Forestry Service at Washington had taken up the commercial study of hickory, and at much expense and effort had secured samples from various parts of the country, cut under their direction, after studying the conditions under which it was grown. These samples had been tested and information was at hand indicating the relative strengths of the various kinds and the adaptability of the various species for different purposes, such as bending strength, etc. [This report was published in full in the March issue of The Hub.]

Treasurer W. A. Snyder, of Piqua, Ohio, submitted his report, covering the finances of the association, which was audited and approved by a committee, consisting of Joseph Ashcroft, of Poplar Bluff, Mo., and H. B. Bannister, of Muncie, Ind.

O. B. Bannister, of Muncie, Ind., chairman of the Executive Committee, then made a report covering the work of the Executive Committee. He reviewed the importance of the plea of the association and the advantages to be gained by the future work if financially supported by those interested to the small extent of the annual membership fee. He said that this is a day of associations and conventions, and that it is the policy of the National Hickory Association to hold general meetings not oftener than once a year, and that the principal work of the individual members would be to lend their unofficial aid, and that the officers and committees would do the actual work. It indicated that when a sufficient number of members had been added the officers would recommend the employment of a permanent paid secretary. As a result of the effort in this direction a number of those present who were not already members signed applications for membership.

President J. W. Herron made a report for the officers of the association, touching on points in connection with the work of the Government and the possibilities of the body influencing the law makers in framing and passing measures looking to the protection of the remaining standing hickory timber. The report deplored the failure on the part of Congress at its last session to pass the law making available the forest reserve in the Appalachian Range, and indicated the desirability of renewing the agitation that would result in the measure being revived and approved.

The president then called upon the members of the Advisory Committee for comments and suggestions as to possible new and additional measures which could be taken to advance the interests of the association. Those responding were:

George Terrell, representing the National Wagon Makers' Association; C. D. Fischer, of Wapakoneta, Ohio, the western carriage wheel manufacturers; D. E. Allen, Wilmette, Ill., the eastern wheel manufacturers; B. F. VonBehren, Evansville, Ind., the bent hickory felloe manufacturers; D. P. Cooper, Struthers, Ohio, the manufacturers of buggy gear woods; F. W. Peters, New Albany, Ind., the manufacturers of hammer, axe and pick handles; Peter Lesh, of Memphis, Tenn., the manufacturers of hickory carriage and wagon spokes, and W. A. Snyder, of Piqua, Ohio, the manufacturers of carriage and wagon shafts and poles.

Remarks were also made by Harry D. Hartley, of Windsor, Ont., formerly connected with the Forestry Service, and now engaged in the production of hickory vehicle stock; also by M. R. Campbell, of Tullahoma, Tenn., and W. H. Braddon, of London, Ont.

The meeting was then thrown open to suggestions, comments or remarks, and an interesting discussion was had of various points of interest bearing on the subject, after which a motion was passed instructing the president to appoint a committee to nominate officers and committees for the ensuing year.

The committee appointed consisted of O. B. Bannister, W. A. Snyder and B. F. VonBehren.

The committee on nominations in their report recommended the following: That the same officers and committees be elected as during the past year, with the exception of J. D. Dort in the place of H. C. Staver, deceased, to represent the Carriage Builders' National Association; J. M. Lack, of the Lack Singletree Company, of Paducah, to represent the singletree and neckyoke people, and Mr. Scott, of the Kellar & Tamm Mfg. Co., St. Louis, representing the handle manufacturers. The officers are as follows:

President—John W. Herron.
Vice-President—E. W. McCullough.
Treasurer—W. A. Snyder.
Secretary—F. A. Curtis.
Chairman Executive Committee—O. B. Bannister.

D. P. Cooper moved that the report be accepted and the secretary authorized to cast a ballot for the officers named by the Nominating Committee. Carried.

The advisability of having a paid secretary to devote his time to the furtherance of the work of the organization was discussed. It was thought it would be desirable to do so as soon as the finances would permit. A motion was made that the matter of having a paid secretary be referred to a committee of three, to be appointed by the president; this committee to confer with the officers before making any final selection. The motion was carried, and the committee appointed was Messrs. O. B. Bannister, B. F. VonBehren and W. A. Snyder.

A resolution was offered by Mr. Gibson, representing the manufacturers of handles, as follows:

Whereas, It is the sense of the National Hickory Association that a census of the standing timber of the country is not only desirable, but essential to the future welfare of the woodworking industries of the nation; therefore be it

Resolved, That an appeal be made to the Senate and House of Representatives of the United States for an appropriation to make a census of the standing timber of all varieties in the country, to be made in connection with the forthcoming census report.

The motion was adopted, and the association adjourned to meet at the call of the Executive Committee.

Among those present at the meeting were the following: F. W. Peters of the I. F. Force Handle Co., New Albany, Ind.; A. P. Steele of the Carrier Lumber and Mfg. Co., Sardis, Miss.; G. A. Lambert of the American Central Lumber Co., Anderson, Ind.; P. O. Burkart and J. Burkart of J. Burkart & Son, Caldwell, Ohio; B. F. Von Behren of the Von Behren Mfg. Co.,

Digitized by Google

Evansville, Ind.; The Mitchell Wheel Co., Miamisburg, Ohio; W. A. Snyder of the Pioneer Pole and Shaft Co., Piqua, Ohio; E. L. Gillett of L. A. Gillett & Sons, Boston, Mass.; A. T. Gillett and A. J. Gillett of Gillett Bros., Memphis, Tenn.; R. H. Guthrio of the Royer Wheel Co., Cincinnati; G. A. Trinler of the American Handle Co., Jonesboro, Ark.; W. E. Small of the W. E. Small Spoke Mfg. Co., Corinth, Miss.; H. B. Bannister of the Muncie Wheel Co., Muncie, Ind.; J. L. Dann of the Campbell & Dann Mfg. Co., Tullahoma, Tenn.; M. L. Shover, Campbell, Mo.; Peter Lesh of the Weis & Lesh Mfg. Co., Memphis, Tenn.; Joseph Ashcroft of the Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.; T. J. Gregory of the T. J. Gregory Handle Works, Cookeville, Tenn.; W. H. Braddon of the Columbia Handle Co., London, Ont.; Henry C. Rudman of the Southern Wheel Stock Co., Ironton, Ohio; W. W. Merriman of the Vehicle Woodstock Co., Chicago; J. W. Herron, Jr., of the Royer Wheel Co., Cincinnati; H. E. Sheets of the Sheets Mfg. Co., Botkins, Ohio; Arthur Ryan, with Crane & MacMahon, Inc., Richmond, Va.; L. A. Bruner of the Paoli Spoke Co., Paoli, Ind.; L. N. Cunningham of the Cunningham Mfg. Co., Fostoria, Ohio; G. W. Sallie, with Sallie & Rone, Rison, Ark., and Sallie & Brown, Kingsland, Ark.; W. L. Fewell, Meridian, Miss.; S. M. Skeon, Empire Bending Works, Lancaster, Pa.; F. L. May, May Bending Works, Loudonville, Ohio; W. M. Hamilton of the Pioneer Pole and Shaft Co., Muncie, Ind.; M. E. Leming of the LaCrosse Wagon Stock Mfg. Co., Cape Girardeau, Mo.; D. P. Cooper of J. A. & D. P. Cooper Co., Struthers, Ohio; A. E. Mahannah of the Mahannah Lumber Co., Memphis, Tenn.; J. H. Keyes of the Standard Wheel Co., Terre Haute, Ind.; Hugh Ford of the Pioneer Pole and Shaft Co., Akron, Ohio; Carl D. Fischer of the Wapakoneta Wheel Co., Wapakoneta, Ohio; L. A. Heston of the McCrillis Handle Co., Norwalk, O.; F. N. Hara, Canada Wheel Works, Merritton, Ont.; George A. Dobbie of the Victoria Wheel Works, Galt, Ont.; J. Hunsucker, Conover, N. C.; C. F. Colville of the Metropolis Bending Co., Metropolis, Ill.; J. C. Scobee of the Scobee-Williams Spoke Co., Winchester, Ky.; A. R. Palmer of the Pioneer Pole and Shaft Co., Wellington, Ohio; P. P. Dyke of the Sidney Mfg. Co., Sidney, Ohio; J. M. Skinner of the J. M. Skinner Bending Co., Toledo, Ohio; H. D. Hartley of the Windsor Turned Goods Co., Windsor, Ont.; A. R. Friedman of the Pioneer Pole and Shaft Co., Piqua, Ohio; F. B. Anderson of the J. M. Skinner Bending Co., Toledo, Ohio; C. T. Stearns and E. F. Stearns of Stearns Bros., Pontiac, Mich.; E. S. Mills and W. L. Clark of the Muncie Wheel and Jobbing Co., Muncie, Ind.; M. R. Campbell, Tullahoma, Tenn.; C. K. Elliott of the Henderson Lumber Co., Henderson and Poole, Ky.; John Siog of the Corydon Hub Factory, Palmyra, Ind.; George McMaster of the Mutual Wheel Co., Moline, Ill.; H. J. Wildermuth of the Lamb-Fish Lumber Co., Charleston, Miss.; J. H. McCormick, Chatfield, Ohio; J. F. Haury of the J. F. Haury Bending Works, Erhart, O.; W. H. Braddon, Columbia Handle and Lumber Co., London, Ont.; C. M. Clark of the Swann-Day Lumber Co., Clay City, Ky.; J. J. Wiesner of the Bookwalter Wheel Co., Miamisburg, Ohio; A. L. Johnson of the Weis & Lesh Co., Muncie, Ind.; H. Rogge and Louis H. Rogge of the Zwick & Greenwald Wheel Co., Dayton, Ohio; H. Hegner of the Arkansas Bending Co., Stuttgart, Ark.; F. M. Falk of the Jonesboro Bending Co., Jonesboro, Ark.; H. J. Skinner of the Skinner-Russell Co., Louisville, Ky.; T. A. White of the St. Marys Wheel and Spoke Co., St. Marys, Ohio; J. H. Lieppe of J. A. Lieppe's Sons, Reading, Pa.; F. A. Curtis, Vehicle Woodstock Co., Chicago; G. C. Hore of F. W. Hore & Son, Ltd., Hamilton, Ont.; Charles Krug of the Hanover Bending Co., Hanover, Pa.; A. G. Eberly of the Eberly & Orris Mfg. Co., Mechanicsburg, Pa.; J. E. Buscher of the Louisville Spoke and Bending Co., Louisville, Ky.; T. B. Clark of the Manchester Mfg. Co., Manchester, Tenn.; W. H. Frechtling of Frechtling & Morner, Shelbyville, Ind.; William Lebzelter of Philip Lebzelter & Son, Lancaster, Pa.; B. G. Lynch of the Jonesboro Bending Co., Jonesboro, Ark.; Mr. Kelsey of the Detroit Bent Goods Co., Detroit, Mich.; Mr. Thompson of Kelly, Maus & Co., Chicago; Mr. Treadway of the John Ernsdorff Iron Co., Dubuque, Iowa; Mr. Kneecamp of the Beck & Corbitt Iron Co., St. Louis, Mo.; Mr. Davis of the Shadbolt & Boyd Iron Co., Milwaukee, Wis.

HINCKS & JOHNSON MAY DISCONTINUE.

In connection with the revival of the rumor that the old firm of Hincks & Johnson, the well-known carriage manutacturers of Bridgeport, Conn., intend to go out of business, Enoch P. Hincks, senior member of the firm, practically confirmed the report recently, when he said that nothing definite had been decided upon, but that neither he nor Mr. Johnson cared to continue in business much longer. "We are both getting along in years," said Mr. Hincks. "We have no plans for the future."

This firm has had many years of a prosperous trade and its reputation among the trade is of the best. At different times during the past ten years there have been reports of the sale of the firm's valuable property in Bridgeport.

INCREASED THEIR FACILITIES.

The Brown-Jenings Hardwood Company has recently built a new dimension stock plant at Gainesville, Florida, which gives this concern much increased facilities. They are probably the largest rough stock manufacturers in the high-grade second growth line in this country, and their famous "Buttcut" brand is well known throughout the world. During the continued business depression this concern has been running full time and reports an abundance of business.

The hickory supply in Florida is limited, although the Brown-Jenings Company has large holdings. Upon entering this field these people encountered numerous difficulties, which they have since overcome. They have practically eliminated the stain feature, so long a menace to Florida stock. These hard woods grow on ridges in dense hummocks on land usually of rich limestone formation. The logging is expensive and dangerous as the Florida forests are a veritable wilderness, abounding in wild animals and venomous reptiles. During the past month this concern lost a valued employee, "Hickory Pete," an old-time woodsman, who attempted to step over a huge alligator which he mistook for a piece of dead timber. His headless body was found lacerated and chewed into perfect pulp. The reptile has since been captured, measuring 15 feet 4 inches long.

CINCINNATI FREE FROM LOSSES BY FIRE.

W. A. Sayers, chairman of the Cincinnati Carriage Club's Committee on Insurance, recently informed that body that no losses from fires occurred to the manufacturers of vehicles in Cincinnati last year. A copy of a list of instructions, impressing on manufacturers the importance of continued great care in this matter was sent to each member of the club, with a request that they be posted in conspicuous places about their shops.

A PAIR OF THE BEST EVER.

One of the most unique and original pieces of advertising matter which has been sent out recently is a pair of lithographed calendars emanating from the Sprague Umbrella Company, of Norwalk, Ohio. These calendars represent a party of dogs engaged in a game of poker, and are entitled "A Bold Bluff" and "A Waterloo." Of the many clever advertising calendars which adorn the walls of the sanctum sanctorum of The Hub none has ever attracted greater attention or elicited more exclamations of admiration. It is safe to predict that the time is not far distant when these companion pictures will adorn the walls of every room devoted to the great American game.

Economy, like system, is commendable, but either may easily be overdone. False economy is often hard to detect, and system that degenerates into red tape is worse than not quite enough.

Digitized by Google

NEW VEHICLE PUBLICATION.

The latest addition to the ranks of carriage trade journalism is The National Vehicle Magazine, of Chicago. The manager and editor is W. P. Nolan, who founded the Implement Age, and The Hub joins with his many friends in wishing him success in his new field.

The National Vehicle Magazine will appear semi-monthly and, as its cover page announces, will be "For the Dealer—Everything on Wheels."

FIRM NAME INCORRECTLY REPORTED.

The firm name of the company which recently acquired the old Ketterer Wagon Works, of Hanover, Pa., is not the Hanover Wagon Works, as erroneously reported in our last issue, but the Hopkins Mfg. Co. The stockholders and directors are Geo. D. Hopkins, Charles F. Hackendom and J. B. Miller. Mr. Hopkins is also head of the Geo. Irving Company, wagon manufacturers, of 209 West Eighteenth St., New York City.

THREE LARGE CONCERNS CONSOLIDATE.

A report from Lansing, Mich., states that the Lansing Wagon Works, the Lansing Spoke Company, and the Ionia Wagon Works, of Ionia, Mich., have been merged into one corporation, with a capital of $750,000, of which amount over $600,000 has already been taken up.

It is claimed that when the new plant gets under full operation it will employ over seven hundred hands and have an annual capacity of 25,000 wagons and sleighs. Some of the prominent stockholders are said to be: Fred. Thoman, E. F. Cooley, Judge R. M. Motgomery, E. S. Porter, W. C. Durant and John F. Bible, the latter to be general manager of the establishment.

ARRANGING UNIFORM CONTRACT BETWEEN LEATHER MANUFACTURERS AND BUYERS.

Within the next six months there probably will be in force in the United States, and possibly in several European centers, a uniform contract betwen leather manufacturers furnishing leather for automobile, carriage and furniture trades and their purchasers, which, the leather manufacturers say, can result only in an improvement in the industry to the advantage of all interests involved. This projected plan will come about, unless the plans of the Patent and Enameled Leather Manufacturers' Association, made last month, fail.

It was decided also to recommend that no contracts to deliver goods at a stated price be made for a period of more than six months. Changes in the hide market during the last year or so, it is said, have caused the manufacturers losses which it is hoped to avoid in the future by shortening the contract period.

The new contract will protect the purchaser against a rising market, and the manufacturer against a falling one, according to the statements of the men who recommend its adoption. Heretofore, the manufacturers say, contracts between themselves and consumers of their goods have been little better than options in the consumers' hands.

As members of the association supply much of the export trade it is believed that foreign customers will reap the benefits of the contracts as well.

There are twenty-six members of the association. These corporations represent more than 90 per cent. of the manufacturers of this kind of leather in the United States. Seventeen of the twenty-six have factories in Newark, which furnishes more than 60 per cent. of the entire output in the United States.

WORK HORSE PARADES.

Boston, Mass., May 30th.
New York, N. Y., May 30th.
Philadelphia, Pa., June 3d.

REGARDING APPLICATION FOR CHANGE IN FREIGHT SPECIFICATIONS.

Chairman Luth of the Freight and Classification Committee of the C. B. N. A., recently received the following communication from Chairman Gill, of the Official Classification Committee, regarding proposed changes. A communication from Chairman Luth to the trade follows:

Office of the Official Classification Committee,
143 Liberty St., New York.

C. E. Gill, Chairman.
Geo. H. Kelland, Secretary.

April 28, 1908.

Subject: Application for change in specification of vehicles, N. O. S., not self-propelling.

Mr. Theodore Luth,
Chairman Committee on Freight and Classification,
Carriage Builders' National Association, Cincinnati, O.

Dear Sir:—Referring to the correspondence that has passed between us touching the subject above named:

You are advised that this matter was considered by our committee at a recent meeting, with result the committee recommended certain changes in the existing classification of the property, and same, if approved by lines in interest, will become effective in the next issue of the classification on or about July 1st.

I am not authorized to state the precise nature of the change in advance of its promulgation in regular form.

Yours truly,
C. E. GILL, Chairman.

Office of Chairman Committee on Freight and Classification, of C. B. N. A.

Cincinnati, Ohio, April 30, 1908.

Gentlemen:—Referring to the foregoing letter will say that I have received information from another source, and while it is not official it can be relied upon as being the recommendation proposed by the Official Classification Committee.

As follows I will outline the present classification and the proposed classification as recommended:

Present Classification.	Proposed Classification.
Package not exceeding 34 in. in height and 94 in. in length.	Package not exceeding 34 in. in height and 100 in. in length.
Package exceeding 34 in. in height but not exceeding 50 in. in height, and not exceeding 94 in. in length.	Package exceeding 34 in. in height but not exceeding 54 in. in height, and not exceeding 100 in. in length.
Package not exceeding 34 in. in height but exceeding 94 in. in length.	Package not exceeding 34 in. in height, but exceeding 100 in. in length.
Package exceeding 34 in. but not exceeding 50 in. in height, and exceeding 94 in. in length.	Package exceeding 34 in. but not exceeding 54 in. in height, and exceeding 100 in. in length.

The present rating is to be continued in connection with the proposed changes as above noted.

It will be seen by Mr. Gill's letter that if the recommended changes are approved by the lines interested, the new classification will become effective on or about July 1st, and while Mr. Gill's committee did not recommend all the changes we asked for, it will be seen that the most important changes have been recommended, and other valuable concessions to the vehicle shippers granted, and our committee are therefore highly pleased with the consideration given our application.

THEO. LUTH, Chairman.

ORGANIZE TO MANUFACTURE VEHICLES.

A corporation is now being organized and has already been partially financed to establish a factory in Pittsburg, Kan., for the manufacture of buggies and wagons. J. W. Huffman, a carriage man from Fort Scott, Kan., is the practical man at the head of the new concern.

The founders of the new organization of vehicle builders, the Carriage Manufacturers' Association of America, were greatly encouraged by the good attendance at the meeting at the Planters Hotel, St. Louis, on Tuesday, April 14th. Many representative manufacturers who had not previously enrolled themselves joined the organization at this meeting.

Digitized by Google

AMERICAN VEHICLES MUCH NEEDED IN THE BAGDAD REGION.

A number of inquiries from American carriage builders relative to trade in and near Bagdad have been received by Consul William C. Magelssen, who represents this country at Bagdad. Mr. Magelssen therefore submits the folowing observations, gained while traveling in that part of Asiatic Turkey:

Inasmuch as Bagdad is the most important trade center in the Mesopotamian Valley there is naturally at all times a large number of merchants and traders going between this city and the regions to the north, to Persia and to the districts lying to the southwest. However, the Mohammedan pilgrims who come from many lands to worship in the holy cities of Kerbela and and Nejef make up the great majority of visitors to Bagdad, and their number is said to be nearly 80,000 yearly. Pilgrims from India reach Bagdad by river steamer from Bassora and proceed in carriages to Kerbela and Nejef, while those who arrive from South Russia and Persia come on horseback, in sedan chairs, in double baskets fastened to a mule's back, or on foot.

No carriage roads exist in Persia in the districts through which they must come, and they can not avail themselves of carriage travel before the Turkish frontier is reached at Khanikin. Rather than dispose of the animals that have carried them hundreds of miles they continue their journey in slow stages down through Mesopotamia until the shrines have been reached, and return in the same manner. The well-to-do class of pilgrims sometimes engage carriages at Khanikin, but their number is very limited, and carriage traffic on the Bagdad-Khanikin road is never heavy.

A Much-Traveled Highway.

The road between Khanikin and Nejef through Bagdad is undoubtedly the busiest in the Turkish Empire. One meets in a day's travel dozens of caravans, each numbering from 75 to 150 or more camels, led by a gaudily bedecked animal carrying on its back an embroidered flag of many colors. There are hundreds of pack mules and tiny, quick-stepping donkeys loaded down with merchandise of diverse varieties. The latter beast of burden is really the Mesopotamian "express and fast mail." The wagons are of one kind—a clumsily built creation of the wagonette pattern. They are manufactured in Bagdad and sold at about $100, but are both heavy and uncomfortable. The top is built of wood and the sides have wooden shutters in place of curtains. They have seating capacity for eight passengers, but frequently as many as twelve persons will crowd into one carriage; the seats have no cushions, which is well from a sanitary point of view.

The rear of the carriages is built higher than the front and it is difficult to enter without assistance. I found exit through a window to be the most convenient, as the top and hub of wheel could then be stepped on. The running gears of the carriages bear no sign of paint, but all have curious objects painted on the door and sometimes inside to keep off the "evil eye." The hubs of these conveyances seem to contract, while the axles appear to lengthen, and a drive in a Mesopotamian carriage is apt to produce a feeling akin to seasickness. It is disagreeable, as the swaying motion keeps one in constant dread that the wheels are slipping off.

The Trip to Nejef.

The journey from Bagdad to Nejef, a distance of 105 miles, is accomplished in two days. The start is made from Bagdad at 4 o'clock in the morning, the carriage being drawn by four horses or mules, and two changes are made before the Euphrates River is reached. There is no bridge there sufficiently strong to permit a carriage to pass over and passengers must cross on foot to the other side, where another vehicle is entered and another lot of animals hitched on. These latter pull the carriage through to Kerbela, where the night is spent, and at 4 the next morning another carriage company takes the weary traveler in hand, and after making four changes of animals manages to deposit him in Nejef in the early afternoon. It will be seen that in order to make the round trip a considerable number of horses and mules must be employed. All carriages are drawn by two teams.

Transportation rates between Bagdad and Kerbela vary between 20 piasters ($0.88) and 60 piasters ($2.64) per seat, according to season, while between Kerbela and Nejef they are inclined to be higher.

The horses employed on these carriages are of the poorest, being purchased at not exceeding $20. The mules are of a better class and cost as much as $80 per head. Their upkeep is said to average about 20 cents per day. The driver provides his own license at a cost of about 45 cents, good for a year, and receives a monthly salary equal to $6.80; he employs an assistant who shares his wages.

The maintenance of the carriage service would appear to be expensive, for the horses are driven at breakneck speed and have little time for rest, as they return the following day. Although the animals are changed, the harness is not, and I have seen a small horse put into a big mule's collar and a big mule placed in the harness of a small horse; the results are obvious. The carriages are constructed of cheap material and can not last long, even on the level and rockless Mesopotamian country.

Carriage Lines In and About Bagdad.

To Hillah, near ancient Babylon, carriages to the number of twelve, of the same class as the aforementioned, run every day, and fares vary according to season. Hillah is reached in twelve hours. Another line runs to Samarra; the distance is covered in ten hours, with but one change of animals. In Samarra lie buried two Mohammedan martyrs and, as large numbers of pilgrims journey to their tombs, traffic on this road is considerable.

There is no regular carriage service to Khanikin, but it is always possible to engage vehicles for the trip. Near the Persian frontier the country is hilly and rough and it is preferable to travel on horseback.

About forty carriages are in daily operation between Bagdad and Muazzem, a suburb. The trip is made in half an hour and a charge equal to 25 cents is made. The carriages are mostly old landaus, of Bombay and Aleppo construction, and it is a marvel that they manage to carry the number of passengers who manage to crowd into them.

In the city of Bagdad about twenty-five carriages are in operation, and the number is gradually increasing. These are of Bombay and Aleppo manufacture, while an occasional European victoria is to be seen. There is no established tariff and a drive through the streets of the "fairy-land city on the Tigris" is likely to prove an expensive luxury.

Overcoming Objections to American Vehicles.

A good market can be created here for American carriages if a proper introduction is made. Catalogues of well-known American carriage builders have been shown to local parties and they all agree that the prices quoted are cheap and attractive, but they object to the light construction of the carriages and refuse to believe that they are suitable for heavy traffic. That American-built carriages are well suited for traffic in this part of the world has been fully established in Palestine, where they are successfully and regularly run between Haifa and the Sea of Galilee. There the country is hilly and rough. The drivers have told me that they have experimented with many kinds of carriages and find the American to be the best. The life of the local horse could be considerably lengthened if lighter carriages were introduced here, the owners would benefit by the splendid construction and wearing properties of the American-made carriage, and surely the travelers would appreciate the change.

One of the veteran American carriage manufacturers wrote some time ago that in the early stages the growth in the export business in carriages was slow, and that it took pluck and patience to persuade foreign buyers to accept the light-weight construction of the running gears of our vehicles, and that on account of their lightness the name of "spider" was given them, and that this name still slings to our carriages in many foreign countries.

American manufacturers are invited by the consul to correspond with a number of Bagdad firms whom he names, a list of which may be secured from the Bureau of Manufactures.

Digitized by Google

SPOKE COMPANY REORGANIZES.

The Winch Spoke Company, of Fort Wayne, Ind., established over thirty years ago, has reorganized and incorporated under the laws of Missouri, with a capital stock of $20,000. Their new plant will be located at Branson, Mo., where they have an abundant supply of second-growth oak and hickory timber. Some of their best men will go with them to their new location, having taken stock in the company.

STEEL BELTING FOR TRANSMISSION OF POWER.

Consul Frank S. Hannah, of Magdeburg, writes that in a recent issue of a German technical paper, the use of steel bands to take the place of leather belting for the transmission of power is stated to have proved practicable after repeated tests by a firm in Charlottenburg, its advantages being given as follows:

The points of superiority claimed for this new method for the transmission of power are the following: On account of its solidity a much narrower band can be used, one-sixth of the width of the usual leather band being sufficient; as a result of this the steel band is not so heavy as the usual leather band, and, as it can be very tightly adjusted, the distance between the engine and the machine is not a matter of importance, as is the case with the leather belting, where the transmission of power is dependent upon the weight of the hanging belt; by a unique contact, the slipping is much reduced, experiments having shown that this does not exceed one-tenth of 1 per cent. Careful and repeated experiments have shown that the entire loss of power is very small, and as far as can be ascertained will not exceed 1 per cent. Further, owing to the lightness of weight of the steel belting, it is claimed, the influence of the centrifugal force is not so great and allows of a much greater velocity.

ART OF HANDLING MEN.

Business men often fail because they do not know how to handle men. They can do their own work all right, but they are failures when it comes to directing others. They lack tact and diplomacy.

Many men antagonize others; they lack patience, lose their temper, and fly to pieces over little things. No man is a good leader who cannot control himself.

A great many business men seem to think that it takes a deal of driving, scolding and fault-finding to get the best out of others. It is, however, just the opposite. Employes never give up their best in response to forcing methods.

A certain young man promises to be a leader in his line because he is as quiet and courteous in his methods as a modest woman. He never raises his voice, never gets angry. When an employe needs correcting, instead of scolding or nagging, he sits right down and shows him or her just how to do the thing. He tries to help his employes out of their difficulties, not to confuse them. He does not need to scold, because everybody respects him, admires him and knows that he is always trying to do the fair thing, to give a square deal, that he wants only what is just right, and that there is nothing arbitrary in his methods. The result is that he has perfect discipline in the establishment. No one would think of taking advantage of him or trying to deceive him, because he is so kind, square and true.

Another man in business nearby him adopts just the opposite method. He storms and swears, scolds, nags, goes through his establishment like a bull through a china shop, making everybody feel mean and disagreeable. Nobody respects him. He rules by brute force, keeping his employes cowed and afraid of him. They obey him and let him impose upon them in order to avoid a scene, or for fear they will lose their positions. If an office boy or stenographer makes a little mistake he will go all to pieces, fly in a rage, and make it very uncomfortable for everybody about him.

People waiting in the outer office often hear loud talking and most abusive language in his private office. He is not nearly as successful as his quiet, unobtrusive neighbor. He never thinks of recognizing one of his employes on the street.

The other man always lifts his hat to the humblest girl in his employ, and has a pleasant smile for everybody, because he feels an interest in everybody and they all love him.—Canadian Manufacturer.

HOW AN AUTOMOBILIST GOT SQUARE.

There was an automobile in the big parade held in New York last month that attracted a lot of attention. It was festooned with lemons from top to bottom. The yellow fruits hung over the sides in profusion. In the car were four people, a man and three young persons. In the parade the machine attracted a lot of attention and much comment. This is the explanation of the odd decoration:

A few months ago the man who drove the machine in the parade bought it from a firm. From the beginning it gave him trouble, and he kicked, kicked hard to the company.

He didn't think he got the satisfaction he deserved, so he kicked again. Relations between him and the company got so strained at last that harsh words were freely exchanged.

The company evidently forgot about the affair for in sending out letters to their customers asking them to take part in the parade so as to give the make of machine a good "ad," they sent one to the man with whom they had the argument.

"Will I parade?" said he to his family. "Will I? Yes, and when it comes to decorations I'll be there, too."

The parade started. So did the man with the machine. He got into line. The company's agents hadn't seen him. But they did then. Were they pleased? Well, not so that you could notice it.

A TIRE IN A MAGAZINE STORY.

Of the many monthly magazines devoted to American fiction The Argosy is as well known to a certain class of readers as any, says India Rubber World. In its pages the first story is always a complete novelette. For example, one that thrills of the most thrillful kind was a "Crack-A-Jack Craftsman," by E. V. Preston. The same author in the May issue writes an equally original novelette entitled "Section 539." The crux of the story, aside from the remarkable adventures of the hero, is his accidental discovery that feathers mixed with a certain kind of dope make a tire puncture proof. The result is that he gets a $10,000 job with the Alexander Puncture Proof Tire Co. The story points so definitely toward the Dow Puncture Proof Tire Co., with its compound of paste and feathers, and its worthy head, whose forename is "Alexander," that the reader is filled with wonder and admiration. Is it a coincidence, or only good advertising?

AMERICAN MADE TAXIMETERS.

First of the American taximeters to be made and put in use is the one made by the Westchester Appliance Company, Yonkers, N. Y., and marketed through the Ajax-Grieb Rubber Company, New York City. The taximeter is made under United States patent No. 760,125, owned by the Taximeter and Cab Co. of America, and the first order was for 2,600, since which time, it is stated, other orders have been placed. This taximeter shows the number of trips, the total cash for the day, the total number of miles covered, and each individual fare. Moreover, by a unique device it is arranged that when there is any discussion regarding fare after the occupant leaves the cab, there is no chance of the driver allowing the fare to be running up. This is accomplished by a further lowering of the flag.

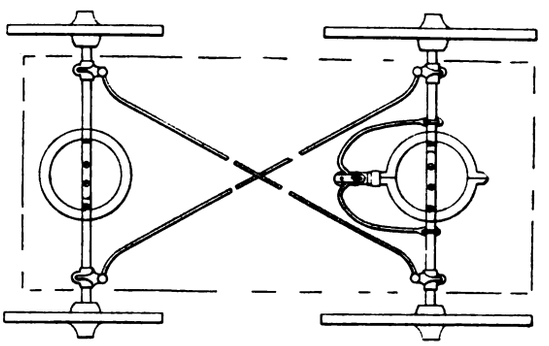
Digitized by Google

Recently Granted Carriage Patents

Space will not permit us to illustrate all new patents pertaining to the vehicle industry issued by the Patent Office. We therefore select those that we consider of the greatest interest to our readers.

Running Gear. Martin W. Heyenga, of Chicago, Ill. No. 882,826. Patented March 24, 1908.

This invention relates to vehicle running gear of the variety admitting of both the front and rear axles turning with the re-



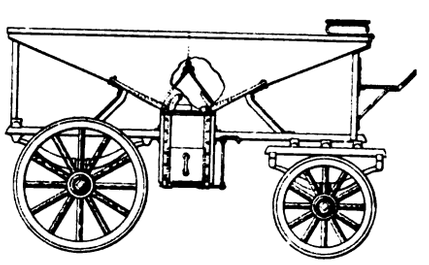
sult that the vehicle is enabled to turn in a comparatively small space. In this type of running gear, the axles, and particularly the rear axles, have free movement which is objectionable on straight or direct roads and produces unnecessary friction and wear.

The present invention provides locking means for the rear axle to secure the same from movement when the vehicle is moving in a direct, or straight line, and which locking means is adapted to be released by movement of the front axle only as when turning the same to depart from a direct course.

The invention provides novel connecting means between the crossed rods, or bars, coupling the front and rear axles; to provide a fifth wheel connection of unique structure between the axles and the springs or intermediate devices between the vehicle body and the axles, and to devise locking means of peculiar formation for securing the rear axle and adapted to be released upon turning of the front axle when departing from a straight course.

Coal Delivery Wagon. Jeremiah Campbell, of Providence, R. I. No. 882,868. Patented March 24, 1908.

This invention consists primarily in coal delivery wagons from



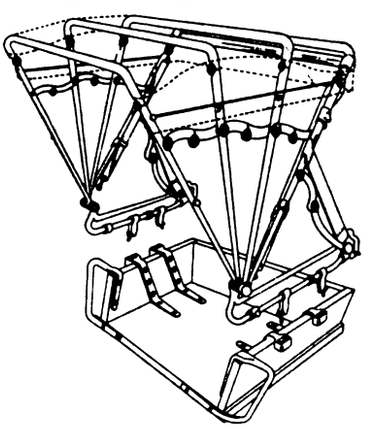
which coal is delivered at the side of the wagon, so that it is unnecessary to back up the wagon. It consists, also, in a delivery wagon having a plurality of compartments, from each of which coal may be delivered, so that the wagon may carry different kinds of coal at the same time.

In using the wagon, either bin may be discharged separately or both bins may be discharged together and a movable chute may be set up into which the coal will fall as it is delivered from the wagon and moved off to the place of final discharge, or the coal may be discharged by lifting the door.

The advantage of this wagon will be apparent to those skilled in the art. The wagon is driven to the curb for unloading like any express or grocer's wagon. It may bring two kinds of fuel to the same house or it may bring a load of fuel to one house and after delivering it carry the contents of its other bin to another place of delivery, or both bins may be filled with the same coal for the same location.

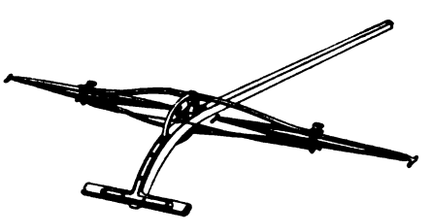
Vehicle Top. Bernard H. Scheper, of Lexington Pike, Kenton Co., Ky. No. 882,914. Patented March 24, 1908.

This invention relates to tops for vehicles and the like, the object being to provide a removable top adapted for carrying in the vehicle, to be used as occasion demands, and it consists in a series of bows adapted to fold down upon their support, and to also fold together with the support. One of the claims is in a vehicle top, bows comprising side members and top transverse members pivoted together, supports for said bows, concentric



pivotal connections between said supports and said bows whereby said bows may be folded down on said supports and the side members of the bows and said supports may be folded inward toward the top transverse members of said bows, a side curtain roller, a shaft for said side curtain roller, a pivotal connection between said shaft and one of said bows, a stud on one of said supports, an eye on said shaft adapted to engage with said stud to hold said side curtain roller in position for use, and a holder on one of said bows adapted to hold said side curtain roller out of position for use, said shaft being so inclined that said side curtain roller may swing from said holder towards said stud to allow the engagement of the shaft with the stud, substantially in a single plane.

Truss-Braced Tree. Benjamin F. Pinson, Jr., of Skiatook, Okla. No. 883,342. Patented March 31, 1908.



This invention has relation to trees used in draft appliances and usually termed doubletrees, and singletrees or whiffletrees, and the object is to provide such trees with strengthening truss rods and other improvements in connection therewith.

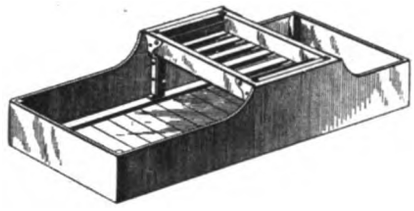
It will be understood that, as the singletrees are pivoted be-

Digitized by Google

tween the ends of the double strip doubletree, they lie substantially in the same horizontal plane with the tongue and thus pull in said plane without any tendency to force the tongue up or down, which is one of the advantages gained by the construction. Another advantage is that the upper strip of the doubletree guards the inner ends of the singletrees from getting caught by the reins. Also that as the strips extend to the very rear end of the tongue, the pulling strain or draft falls on the metallic parts and not on the wooden part of the tongue back of the bolt. The conic shape of the trunnions prevents rattling and provides greater wearing surface and makes the parts practically self-adjustable when they wear, except that possibly the small surface at the very end of each cone may have to be touched off with a file once in a great while, if the sides of the cone should wear faster than the end of it. The device as an entirety possesses strength, steadiness and durability without involving objectionable weight or unsightly appearances to the vehicle.

Vehicle. Martin F. Geserich, of St. Louis, Mo. No. 884,014. Patented April 7, 1908.

This invention relates to a new and useful improvement in

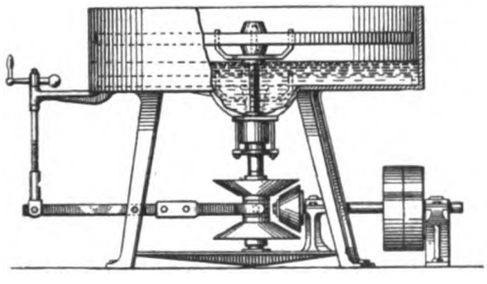


vehicles and pertains particularly to means for bracing and reinforcing the seat frame and body thereof.

The seat frame posts, the front and rear stretcher rails, and the side rails are all parts which go to make up the seat frame. These rails and posts are all joined together in the ordinary manner, such as mortising, and when so united they are, in the absence of any bracing means, very liable to become separated during the use of the vehicle. This invention is utilized to prevent the separation of such parts. Its form and method of applying are clearly shown in illustration herewith.

Wheel-Painting Machine. Henry P. Corbin, of Moline, Ill., assignor to C. A. Willey Company, of New York City. No. 833,172. Patented March 31, 1908.

This invention relates especially to that class of devices employed for applying filler, priming, paint, varnish, etc., to vehicle wheels by immersing the wheel in a tank or receptacle, means being provided for lowering the wheel beneath the surface of the coating material, and holding the coated wheel above the said material after applying, and then rotating the wheel to remove surplus material by centrifugal force, and spreading that which adheres uniformly and evenly over the wheel, and has for its object the provision of simple and effective means for lowering and raising the wheel, the present invention being an im-

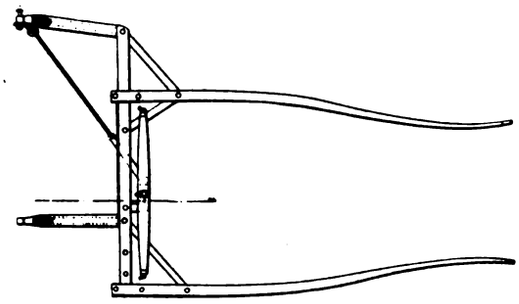


provement on the device shown in United States Letters Patent, No. 796,442, issued August 8, 1905, to Edward L. Moran.

To attain the desired end, this invention consists essentially in a wheel supporting spindle for wheel painting machines, in which is comprised a hollow vertical shaft; means for rotating the same; a collar having a square perforation therethrough fixed to the upper extremity of the hollow shaft; a square rod arranged to move longitudinally within the hollow shaft; a spring between the square rod and the bottom of the hollow shaft within said hollow shaft, and a wheel-support mounted on the square rod.

Vehicle Shaft. George F. Skelton, of Wabasso, Minn. No. 883,579. Patented March 31, 1908.

The object of this invention is to provide means by which the

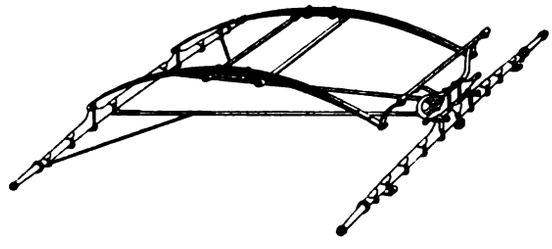


shafts of a vehicle, and more especially of a buggy, may be located at one side of the center of the vehicle so that the horse may walk in the track formed by one of the two horses when a team is used and thus avoid the usually rough and unpleasant ridge formed in the middle of a wagon road.

The bow-irons are connected at their forward ends with the cross-bar, one of the said irons being connected with the end of the said cross-bar opposite to that end thereof to which the shaft is attached while the end of the other bow-iron is connected with the cross-bar at a point between the points of connection of the said shaft with the said cross-bar. Braces extend between the shafts and the cross-bar, while the bow-irons are provided with braces. The lever is fulcrumed to the cross-bar, said lever having a rearwardly extending fulcrum end and a rearwardly inclined end. The link attaches at one end to the end of the lever and at its other end is connected with the end of one of the bow-irons. The singletree is mounted upon the lever and may be adjusted laterally along the same by reason of perforations provided in the lever which are adapted to receive the pivot bolt of the said tree.

Side-Spring Vehicle Gear. Chas. A. Behlen, of Durham, N. C., assignor to Durham Buggy Co., of same place. No. 883,686. Patented April 7, 1908.

This invention has relation to side-spring vehicle gears of that



class in which reach connections are employed, and is designed to provide a gear of this character having means for keeping the gear in track, and which will obviate the use of swinging or sliding couplings, and equalizers; also to provide means for preventing the reaches from bowing, when the springs are in action.

The rear ends of the side springs are connected to the rear axle by means of pins extending through eyes or heads on the ends of the springs which journal in the shackles clipped, or otherwise secured, to the axle. The front end of each spring has connected thereto an upwardly and forwardly-extending arm.

By reason of this manner of connecting the springs at their front ends, it will be seen that when the springs are in action, the tendency is for their rear arms to become longer, while the front arms shorten, that is to say, the distance between the center of the side spring and the rear axle becomes relatively greater than the distance between the center of the side spring and the front axle. This results in an equalizing action which

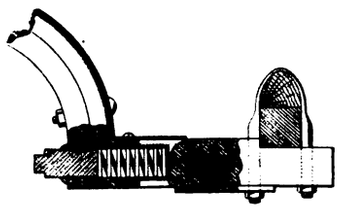
Digitized by Google

relieves the gear from strain, especially at the points where the arms are connected to the elevator bar, and also effectively prevents any bowing of the reach rods.

Combined Anti-Rattler, Thill Coupling and Support. Walter Cox, of Provo, Utah. No. 884,469. Patented April 14, 1908.

The object of the present invention is the provision of a novel thill coupling and support having means whereby the thills may be readily detached when desired and also provided with an improved device for automatically locking the thill when it is raised above its ordinary position, thus facilitating hitching of the horse, as well as providing means for holding the thill out of the way when it is desired to have it thus positioned. Another object is to provide a thill coupling and support of novel construction which will be provided with novel means for taking up all lost motion and thus preventing rattling.

Any desired tension may be placed upon the spring by adjusting the screw. To entirely detach the thill member, the nut holding the plate is removed and the plate taken off. The ten-



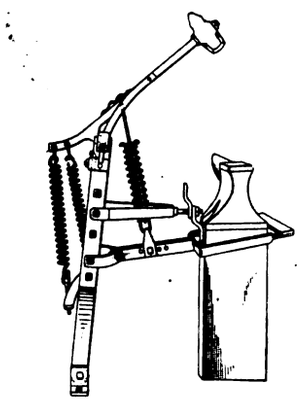
sion of the spring being lessened by unscrewing the screw, the abutment and cushion can be removed through the neck and the pin then made to pass through said neck.

Foot-Power Hammer. August H. Wertz, of Kansas City, Kans. No. 884,786. Patented April 14, 1908.

This invention relates to foot-power hammers, and aims to provide a hammer of such class, specially adapted for the use of blacksmiths, and which may be conveniently arranged for anvil work.

This invention further aims to provide a foot-power hammer with means whereby the angle in which the face of the hammer strikes the material can be regulated, and furthermore to provide the hammer with means whereby the leverage of the operating lever can be regulated so as to impart a quick or a slow blow to the hammer as is desired.

The various springs cushion the hammer in such a manner that it relieves the jar on the foot when operating the machine and also the jar on the mechanism, and furthermore the construction is such that it will cause very effective blows to be given without damage to the machine or injury to the operator. Owing to



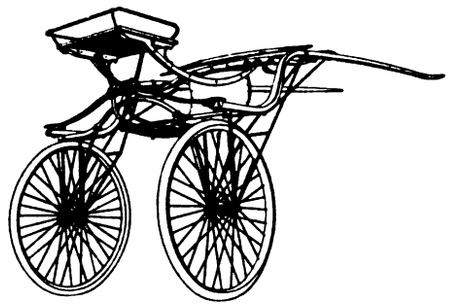
the manner in which the operating lever is accessible from either side or from the front of the anvil, no matter where pressure is applied to the foot lever, the power will be applied centrally.

Two-Wheeled Cart. James White, of Penn Yan, N. Y. No. 884,695. Patented April 14, 1908.

This invention relates to new and useful improvements in two-wheeled carts or speeding carts.

The construction provides a speeding cart with a frame so arranged that in case of collision the wheels are protected from impact and the frame is so firmly braced that it will resist the shock and the several parts are not liable to be separated.

The connection between the shafts in front of the seat hold them securely from twist or wrenching strain. The position of

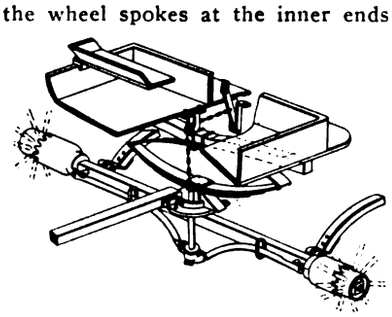


the lengthwise braces connected at the ends of the cross-bars and to the shafts and axle form with these a well braced frame, so that any shock is not taken by any special part of the cart, but is transformed from one part to another and they all combine to resist the shock and prevent strain upon or separation of the several parts.

Horse Detacher. Robert Coates, of Washington, D. C. No. 884,795. Patented April 14, 1908.

The object of this invention is to provide improved, simple and highly efficient means for insuring the release of the tongue or thills from a vehicle and applying braking means to the wheels in case of emergency.

The brakes are slidably mounted on an axle and designed to normally envelop the inner ends of the hubs. Each brake is shown in the form of a sleeve notched at its outer end so as to engage with the wheel spokes at the inner ends thereof when



such sleeves are forced outwardly against the wheels. From the inner ends of the brake sleeves project studs which normally fit in openings in bolts pivotally secured to the thill irons and extended through openings in the axle. In this way the thills are detachably attached. The studs are normally held in locking engagement with the thill bolts and the brakes out of engagement with the wheel spokes by springs preferably located within said sleeves.

The brake controlling rods have their outer ends pivotally secured to the brake sleeves and their inner ends pivotally connected together and to a vertically disposed rod to which is secured one end of a chain, the other end of the latter being attached to a foot lever located within convenient reach of the driver. This lever is preferably extended through the footboard of the vehicle.

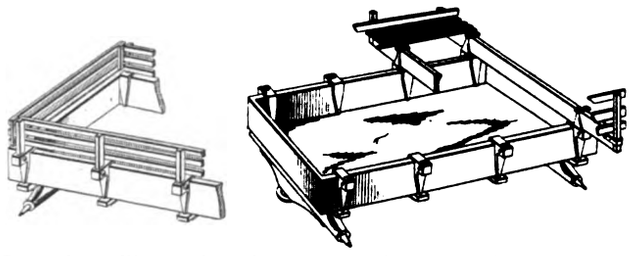
Normally the parts are in position shown in illustration, the brake sleeves being held out of engagement with the wheel spokes by the springs. In consequence the studs are in locked engagement with the thill bolts. Pressure on the foot lever will, through rods, effect the outward movement of the brake sleeves and the disengagement of the locking studs from the thill bolts. In this way the thills are immediately released from the vehicle and at the same time the brakes are applied to the wheels.

Rack for Farm Wagons. Joseph F. Pokorney, of Hutchinson, Minn. No. 884,679. Patented April 14, 1908.

This invention has relation to the bed of wagons designed

Digitized by Google

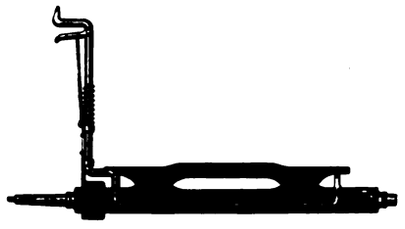
chiefly for use of farmers and which may be readily converted into a rack for hay, stock or wood, or which may be used as a wagon body for hauling grain, potatoes or other farm products.



One of the illustrations is a perspective view of the body forming the bottom portion of the several racks or wagon box, according to the adaptation of the invention, having a portion of the hay rack in place. The other is a perspective view of the invention adapted for use as a stock rack. It may also be adapted for use as a wood rack or wagon box.

Vehicle Brake Apparatus. John W. Taylor, of Fulton, Ky. No. 883,061. Patented March 24, 1908.

This invention relates to improvements in vehicle brake apparatus, especially with reference to the provision of a brake



lever, which is mounted directly on the front axle of the wagon; a segment bracket also attached to such front axle, and a dog mounted on the bracket lever for co-action with the segment arm of the bracket to lock such lever in adjusted position.

The accompanying drawing is an elevation of vehicle brake apparatus, showing the same attached to the front axle of the wagon.

It will be understood by reference to the drawing, that the hook of the pawl is adapted to engage the ratchet teeth of the segment to lock the lever at any desired adjustment. The lever is provided with projections which extend from one side thereof and bear against one side of the shank or stem of the dog to prevent the latter from turning on the lever. A stop pin passes through the lever and projects from opposite sides thereof and a coiled extensile spring is placed on the said lever and bears between the said stop pin and the upper arms of the dog and serves to force the dog downwardly to keep its hook normally in engagement with one of the ratchet teeth of the segment.

RECENTLY GRANTED PATENTS OF INTEREST TO THE VEHICLE TRADE.

882,615—Vehicle reach. F. W. Bleckley, Hazelton, Pa.
882,868—Coal delivery wagon. J. Campbell, Providence, R. I.
882,869—Chute wagon. J. Campbell, Providence, R. I.
882,743—Combination wagon or other vehicle. T. Carroll, Anaheim, Cal.
882,748—Whiffletree. G. F. Danielson, Youngstown, Ohio.
882,933—Mud guard for vehicle wheels. W. E. Drake, Chandlerville, Ill.
883,102—Nut lock for axle spindles. W. O. C. Ellis, Greenfield, Ohio.
882,826—Running gear. M. W. Hyenga, Chicago, Ill.
882,759—Vehicle wheel brake. B. F. Hornsby, Grangeville, La.
882,650—Thill support. A. W. Perry, Wakefield, assignor of one-half to J. C. Davis, Peace Dale, R. I.
883,050—Sled. T. B. Poindexter, Alexandria, Ind.
882,846—Wheel hub with ball bearings. E. Sachs, Schweinfurt, Germany.
882,914—Vehicle top. B. H. Scheper, Lexington Pike, Kenton Co., Ky.
882,972—Thill coupling. J. S. Shoemaker, New Lothrop, Mich.
882,718—Road vehicle wheel. J. Slee, Newton-le-Willows, England.
883,061—Vehicle brake apparatus. J. W. Taylor, Fulton, Ky.
882,981—Vehicle coupling. M. Turner, Steamboat Springs, Colo.
882,855—Wheel assembling machine. J. R. Welch, assignor to Keefer-Heart Iron and Steel Co., Alexandria, Ind.
882,986—Axle. O. Zachow and W. Besserdich, Clintonville, Wis.
882,773—Axle. E. P. Zahnter and J. Kunzmann, Highland, Cal.
39,219—Design—Automobile body. C. Schmidt, assignor to Peerless Motor Car Co., Cleveland, Ohio.
883,301—Wagon running gear. S. K. Dennis, Chicago, assignor to International Harvester Co.
883,454—Mud shield for vehicle wheel guards. G. W. Dunham, assignor to Olds Motor Works, Lansing, Mich.
883,637—Automatic brake. J. E. Frost, Newman Grove, Neb.
883,398—Flexible tire for vehicle wheels. C. C. Gouin, Paris, France.
883,202—Vehicle brake. E. A. Johnston, Sterling, Ill., assignor to International Harvester Co.
883,314—Axle nut. W. W. Jones, Downs, Kans.
883,666—Tire setter. C. O. Pearce, Cheneyville, La.
883,344—Wagon jack. W. L. Preston, Lincoln, Ill.
883,488—Short-turning gear. T. Sandstrom, Indianapolis, Ind.
883,579—Vehicle shaft. G. F. Skelton, Wabasso, Minn.
883,356—Vehicle spring. W. H. Smith and J. H. Klassen, Los Angeles, Cal.
883,582—Device for automatically controlling lamps on vehicles. J. W. P. Smithwick, LaGrange, N. C.
883,371—Vehicle steering device. G. H. Young, Des Moines, Iowa.
883,686—Side-spring vehicle gear. C. A. Behlen, assignor to Durham Buggy Co., Durham, N. C.
883,689—Vehicle standard. F. W. Bleckley, Hazelton, Pa.
884,127—Combined wagon and truck. L. P. Carroll, New York City.
883,938—Elastic securing device for doors of automobiles and other vehicles. F. Charron, Puteaux, France.
883,947—Vehicle wheel. O. M. Fraley, Victor, Oregon.
884,014—Vehicle. M. F. Geserich, St. Louis, Mo.
884,173—Attachment for wagons. J. W. Liles, North Platte, Neb.
884,204—Folding seat for vehicles. H. H. Piper, assignor of thirteen-twentieths to R. T. Henderson, Jackson, Mo.
883,739—End gate. C. H. Polk, Kappa, Ind.
12,777—Re-issue—Vehicle wheel rim. F. A. Seiberling, Akron, Ohio.
884,225—Wagon hound. G. W. Sirrine, Greenville, S. C.
883,736—Tire for vehicle wheels. J. E. Tourtellotte, Hartford, Conn.
883,989—Combined wagon bed and hay rack. J. S. Walton, Georgetown, Ky.
884,702—Tire and wheel therefor. W. Bowden, New York City.
884,715—Whiffletree attachment. E. C. Coffin, Coffinton, Ga.
884,898—Locking mechanism for end gates. A. T. Correll, Bradenville, Pa.
884,469—Combined anti-rattler thill coupling and support. W. Cox, Provo City, Utah.
884,916—End gate. J. W. Fisher, Brunswick, Neb.
884,488—Running gear for vehicles. H. W. Hancock, Chicago, Ill.
884,388—Coupling for whiffletrees. W. W. Hills, Kalkaska, Mich.
884,389—Singletree. J. B. McDonald, Jacksonville, Fla., assignor of one-half to H. Partridge, Duval Co., Fla.
884,840—Vehicle wheel. J. B. McDonald, Jacksonville, Fla., assignor of one-half to H. Partridge, Duval Co., Fla.
884,679—Rack for farm wagons. J. F. Pokorney, Hutchinson, Minn.
884,612—Metallic vehicle hub. P. Reinhardt, Omaha, Neb.
884,695—Two-wheeled cart. J. White, Penn Yan, N. Y.
884,447—Spoke extractor. D. L. Williams, Trenton, assignor of one-half to G. P. Dodge and R. L. Mealus, Utica, N. Y.
884,967—Shock absorber for vehicles. W. C. Williamson, New York City.
39,266—Design—Vehicle body. J. C. Kaiser, Kenton, Ohio.

Copies of above patents may be obtained for fifteen cents each, by addresing John A. Saul, solicitor of patents, Fendall Bldg., Washington, D. C.

RECENTLY EXPIRED PATENTS OF INTEREST TO THE VEHICLE TRADE.

Patents Expired March 10, 1908.

447,756—Wagon jack. C. C. Bower, Birmingham, Ala.
447,786—Thil coupling. D. McCready, Perrysville, Ohio.
447,893—Wheel. J. G. McAlpine, Bakersfield, Cal.
448,015—Two-wheeled vehicle. C. C. Frick and N. P. Wood, Blue Springs, Mo.
448,025—Fifth wheel. J. H. Gressom, Knapp, Wis.
448,095—Draft equalizer. T. Thompson, Townsend, Mont.
448,105—Whiffletree. B. B. Allen, Hanford, Cal.
448,129—Draft equalizer. D. B. Croft, Sweetwater, Ill.

Patents Expired March 17, 1908.

448,483—Draft equalizer. S. Graham, Lebeck, Mo.
448,543—Vehicle spring. G. E. Raymond, Grand Rapids, Mich.
448,611—Vehicle shaft. R. Gracey, Allegheny, Pa.

Patents Expired March 24, 1908.

448,790—Platform spring for road wagons. C. W. Saladee, Cleveland, Ohio.
448,793—Wheel tire. W. E. Bartlett, Edinburgh, Scotland.
448,843—Fifth wheel for wagons. A. B. Bishop, Medina, Ohio.
448,855—Road cart. J. D. Dort, Flint, Mich.
448,931—Carriage top. G. J. Carpenter, Bridgeport, Conn.
449,027—Thill support for vehicles. J. J. Barker, Washington, D. C.

Patents Expired March 31, 1908.

449,121—Road cart. S. B. Irwin, West Hebron, N. Y.
449,205—Wheel for vehicles. J. N. Clouse, St. Louis, Mo.
449,212—Dumping wagon. J. W. Dunham, Englewood, and G. W. Kisinger and F. P. Kisinger, Danville, Ill.
449,264—Wheel hub. M. W. Ford, Jr., Manchester, N. H.
449,265—Dumping wagon. J. A. Klees, Reading, Pa.
449,281—Tire for vehicle wheels. C. Challiner, Lomgsight, England.

Patents Expired April 7, 1908.

449,695—Spring vehicle. H. W. Pell, Rome, N. Y.
449,717—Vehicle spring. H. Timken, San Diego, Cal.
449,720—Dumping cart. F. Weber, Louisville, Ky.

Put off till to-morrow that ugly retort you were about to make and feel that the occasion justifies. Get your work done to-day, and maybe the "justice" will come of its own accord.

Digitized by Google

DOGS OPERATE THE BELLOWS OF A NEW YORK SMITH.

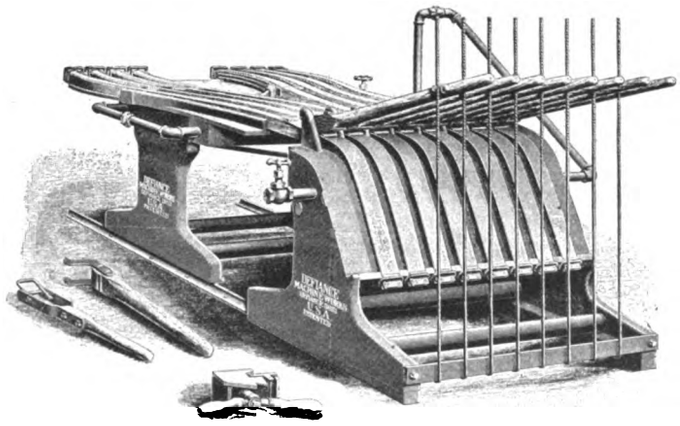
On an uptown street on the East Side of New York City, hundreds of people daily pause at a blacksmith's shop to watch three large Newfoundland dogs, which are employed by the smith to work the bellows of the forges of his shop. In one corner of the place is a wooden wheel, about eight feet in diameter and wide enough for a dog to stand in. When the wheel is at rest the dog stands in much the same position as the horse in a child's rocker, with its head toward the forge, awaiting orders.

When told to "go ahead," the beast on duty at once starts on a brisk trot, which makes the wheel turn around rapidly, and by means of a crank and lever the power is converted to the bellows. The dogs work willingly and with such intelligence that pedestrians are never weary of watching the efforts of the animals to keep the smith's fires bright. Each dog works in the wheel for one hour and then rests for two hours. The three dogs cost their owner about $4.00 a week to keep, plenty of meat being given the beasts at each meal, and he estimates that they save him $16 a week, as otherwise it would require the services of at least two men or a small engine to do the work.

HOT FORM SHAFT AND POLE BENDING MACHINE.

This engraving represents a patent hot form shaft and pole bending machine, which is used by the makers of bent woodwork for bending carriage and express shafts and poles. It has been designed specially by the Defiance Machine Works, Defiance, Ohio, to meet the requirements of carriage makers who desire to bend their own work. The material is bent over iron forms which are made to the shape of the work to be bent, and they are heated by steam to season or dry the material during the process of bending. It will bend eight pieces at one time or forty pieces in ten hours. The bent material should remain on the hot forms about two hours after bending, to properly set, after which they will not change in shape.

The bending forms are cast hollow for the reception of steam, and they are supported upon heavy iron frames with a wide floor



base. The one which supports the body of the shaft or pole is fitted with rollers at the base, and they travel upon a steel track to adjust it to or from the heel form for work of different lengths.

The work to be bent is first steamed or soaked in hot water to make it as soft as possible, after which it is placed in the bending machine, with the portion to be bent covered with a steel strap to prevent fracturing. It is then bent down over the forms by convenient hand levers furnished for that purpose, which are then locked down tight to the forms.

It takes a good man to do that which he doesn't want to do, and do it well.

COMMERCIAL RATING OF THE NATIONS.

The last estimate of the Bureau of Statistics of the total annual imports of all the countries of the world is $13,739,000,000. The bureau's estimate of total exports is $12,496,000,000.

The four leading commercial nations, England, United States, France and Germany, take nearly 48 per cent. of the total imports and send out over 45 per cent. of the total exports.

England is the chief importing country of the world. Her imports amount to 20 per cent., or one-fifth, of the world's total in a given year. Germany comes next, with imports of 12.3 per cent.; the United States next, with imports amounting to 8.9 per cent., and France fourth, with a percentage of 6.7.

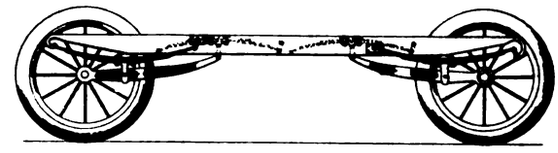
The United States is the largest exporting nation, her exports amounting to 13.8 per cent. of the world's total. England comes next with a percentage of 12.9, Germany third with a percentage of 11, and France fourth with a percentage of 7.5.

The United States therefore is first as an exporting country and third as an importing country. Great Britain stands first in imports and second in exports. Germany stands second in imports and third in exports, while France is fourth in both imports and exports.

RUNNING GEAR FOR AUTOMOBILES.

Harry W. Hancock, of Chicago, Ill., has produced and patented a running gear for automobiles or other vehicles in which sudden upward tendencies of the carrying springs are compensated for by a restraining downward pull upon the vehicle body. The wheels of this vehicle are supported by pivoted carrying arms and having means for cushioning the pivotal movement of said arms.

When any of the wheels of the vehicle strike an obstruction, said wheels are thrown upward, compressing the carrying springs



above said wheels. The upward movement of the wheels produces a downward pull upon the compensating springs at the inner ends of the carrying levers supporting the wheels that were so raised. This downward movement tends to overcome the upward throw of the carrying springs, modifying the force of the upward movement of the vehicle body without in any way interfering with the function of the carrying springs in absorbing the upward blow of the obstruction against the wheel. By changing the relative pivotal points of the carrying levers and the relative tension of the carrying springs and the compensating springs, different effects in the operation of the springs may be obtained. The patent number is 884,488.

COMMERCIAL CARS IN CONTEST.

Fifty heavy-weight automobiles of all classes left Paris on May 4th, for a month's tour of France. They are engaging in an industrial competition under the patronage of the Ministry of War.

REPORT THAT VELIE CARRIAGE COMPANY WILL BUILD AUTOMOBILES.

A rumor is in circulation in manufacturing circles of Moline, Ill., that the Velie Carriage Company, of that place, will enter into the manufacture of high-grade automobiles.

The man who works more diligently when working for another than when working for himself may need instructions, but he doesn't need much "bossing."

Digitized by Google

OBITUARY

John Crane.

John Crane, president of the corporation of Crane & MacMahon, Inc., of New York City, died on April 8th, in the sixty-ninth year of his age.

Mr. Crane was born in Morgan County, Ohio, February 10, 1840. His father moved to Wisconsin when he was a child, settling in Juneau County. Early in the spring of 1861 Mr. Crane helped to organize a company of volunteers—of which he was made second lieutenant—which was alloted to the Sixth Wisconsin Regiment, which was part of the famous "Iron Brigade." Mr. Crane resigned from this regiment during the winter of 1861-62, and joined the Seventeenth Wisconsin Volunteer Infantry, which was then being organized. He aided in organizing Company A of that regiment and was made first lieutenant. Afterwards, upon the promotion of the adjutant, Mr. Crane was made his successor. He held this position until the close of the



John Crane.

war, taking part, after the battle of Shiloh, in the campaigns of Generals Grant and Sherman, around Vicksburg and Atlanta. He was with his regiment during Sherman's "March to the Sea," and ended his service at the close of the war, in Washington.

Mr. Crane then became interested in the hickory industry in North Carolina with Col. Thomas MacMahon, who was a brother officer in his regiment. He was sales agent in New York for the North Carolina Coach Material Company, of which Col. MacMahon was president, from 1870 until the company was transferred to Richmond, Va., and a new company organized, known as the Virginia and North Carolina Wheel Co.

The firm of Crane & MacMahon, composed of John Crane and Wm. A. MacMahon, was organized in 1879. This firm owned and operated the Virginia and North Carolina Wheel Co., the St. Mary's Wheel and Spoke Co., the Wapakoneta Bending Co., the Mitchell Spoke Works, and the St. Mary's Woodstock Co., but these interests were consolidated recently and one corporation formed, called Crane & MacMahon, Inc., Mr. Crane being chosen president. This position he held at the time of his death.

Martin A. Johnson.

Martin A. Johnson, for many years a prominent farm wagon manufacturer of Stoughton, Wis., died suddenly on April 8th, at the age of forty-six years. Mr. Johnson was born on a farm near Stoughton, in 1862. He was elected president and general manager of the Stoughton Wagon Company in 1891, in which capacity he served for ten years. He was heavily interested in this company and served as a director from the time of their organization in 1883. In 1903 he was made cashier of the First National Bank of Stoughton and was also interested in other concerns.

The untimely passing of Mr. Johnson removes a figure honored by all who knew him. His strong characteristics were his unswerving honesty and thorough sincerity. Deceased leaves one daughter, his wife having passed away about a year ago.

John K. Ryer.

We learned, too late for announcement in the April issue, of the death of John K. Ryer, body maker, who last December completed fifty years of active service with the house of Brewster & Co., New York. His death occurred suddenly on March 8th, of acute peritonitis, up to which time he was employed at his trade. Deceased was born in New York City, and at the age of sixteen years began to serve his apprenticeship with Brewster & Co., which firm was then located at Broome and Mott Streets.

Mr. Ryer, during his time, constructed carriage bodies of all kinds, from a buggy to a mail coach. He was always of a jovial disposition and was much liked by his fellowworkers, many of whom sincerely regret his passing.

Henry M. Rines.

Henry M. Rines, for forty years engaged in the carriage manufacturing business in Augusta, Maine, and prominent in Grand Army circles, died on April 29th, from the effects of a paralytic stroke. He was seventy years of age and the first lieutenant of Company B, First Maine Infantry, during the Civil War, being the first in Maine to respond to the call for volunteers. He leaves a widow.

Louis Wehn.

Louis Wehn, for twenty-five years engaged in the carriage making business in Beatrice, Neb., died April 14th, at Rawhide, Nevada, after a brief illness of pneumonia. The deceased was about fifty-seven years of age. He left Beatrice two years ago.

SEVERE PUNISHMENT FOR RECKLESS AUTOMOBILE DRIVING.

Consul-General B. H. Ridgely, of Barcelona, reports that laws against reckless automobiling are becoming more severe and specific in Europe. He cites the following:

In France, a law has just been enacted which punishes with heavy fine and several months' imprisonment any conductor or owner of an automobile, who having caused any sort of an accident, or who having been in a collision with any other vehicle or individual or object does not immediately stop and give his name and adress to the police, or to other representatives of the law. This punishment is to be specifically imposed, quite irrespective of the merits of the case itself. Thus, the offender would be liable for double punishment; first, for not having stopped to give his name and address, and second, for having caused the accident. On the other hand, he might be held guiltless of wrong in the matter of the accident itself, but he would none the less certainly be punished in the first instance. In short, the purpose of the new French law, which will in all likelihood be immediately enacted by all other continental countries, is to separately and specifically punish the chauffeur, who, having been in an accident, runs away without disclosing his identity.

NETTED A NEAT SUM.

It is said that E. D. Winans, who formerly held the sole agency for the sale of Michelin tires in this country, netted the very neat sum of $200,000 in the sale of his company and the American rights to the present American Michelin Company.

Digitized by Google

Trade News From Near and Far

BUSINESS CHANGES.

G. F. Dumbauld has engaged in the vehicle business in Nevada, Iowa.

F. M. Brown has sold his vehicle business in Hunter, N. D., to L. Moon.

Joe Salome has purchased the vehicle business of Moller & Co., in Lincoln, N. M.

O. C. Porter has sold his stock of buggies, etc., in Cornet, Texas, to J. P. Wood & Co.

Nelson & Nelson have purchased the vehicle business of C. W. Kelly, in White City, Kans.

Sam Dutch has purchased the stock of buggies, etc., of W. L. Lynds, in White Cloud, Kans.

E. L. Miles has purchased the stock of buggies, etc., of L. S. Starkey & Son, in Terril, Iowa.

Carraher Bros. have sold their buggy business in Platte Center, Neb., to Glowdowski Bros.

John Heffel has sold his buggy and implement business in Sterling, Neb., to Pickrell & Co.

F. B. Hill has purchased the vehicle business of Wasem & Richardson, in Harrisburg, S. D.

Gooding & Kelty have been succeeded in the vehicle business in Franktown, Colo., by A. Kelty.

Christensen & Lang have purchased the vehicle business of G. W. Hoover, in Audubon, Iowa.

J. D. Pinnell has sold his vehicle and implement business in White Lake, S. D., to E. M. Adams.

J. H. Taylor has succeeded to the implement and vehicle business of Taylor & Winn, in Minden, La.

Frank Robb has purchased the buggy and implement business of Weir & McMillan, in Linn Grove, Iowa.

The Turner & Frink carriage plant at North Adams, Mass., has been purchased by Lefevre & Robarge.

Orr & Sorenson have succeeded to the buggy and implement business of C. L. Orr, in Bellingham, Wash.

W. E. Wilcox has succeeded to the vehicle and implement business of Leedom & Wilcox, in Kearney, Neb.

C. H. Blanton & Son have purchased the buggy and implement business of Fred. Miller, in Valley View, Texas.

G. M. Sandstrom has purchased an interest in the buggy and implement business of P. R. Johnson, in Bertrand, Neb.

O. V. Staman has purchased an interest in the carriage and harness business of J. W. Brady, of Maquoketa, Iowa, and the firm will be known as J. W. Brady & Co.

NEW FIRMS AND INCORPORATIONS.

P. C. Peterson has opened a stock of vehicles in Weston, Iowa.

W. S. Wooley has engaged in the vehicle business in Dalton, Neb.

C. Johnson has engaged in the carriage business in Hermiston, Ore.

Geo. M. Lewis has engaged in the vehicle business in Wellington, Kans.

Geo. T. Falk, a hardware dealer of Foley, Minn., will add a line of vehicles.

H. W. Petrie is putting in a new stock of vehicles in Vancouver, B. C.

The St. Joe Motor Car Company, Elkhart, Ind., has begun operations. This is the concern that purchased the assets of the defunct Shoemaker Automobile Company.

The Autobus Company has been organized at Camden, N. J., for the purpose of manufacturing coaches and automobiles; capital, $1,000,000. The incorporators are Frank A. Hansell, John A. MacPeak and William F. Eidell.

M. A. Larson has engaged in the buggy and implement business in Hordville, Neb.

The Regal Buggy Company, of St. Louis, Mo., has opened a branch in Hastings, Neb.

Mehlhouse, Felski & Erickson have opened a new stock of buggies, etc., in Olivia, Minn.

The Gardener Motor Vehicle Company has been incorporated in St. Louis, Mo., with a capital stock of $75,000.

Killgore & Stilz have incorporated, with a capital stock of $40,000, and will manufacture vehicles in Louisville, Ky.

The Central Foundry and Machine Company, of Collinsville, Ala., will establish a wagon and plow manufacturing plant.

Kupers & Weber have opened a new stock of vehicles, etc., in Pendleton, Ore.

The Ahr & Rost Company has been incorporated by George Rost and others, at Cincinnati, with a capital of $25,000. They manufacture carriage and other vehicle wood work.

The Chandler-Eastman Company, of West Concord, N. H., has been organized for the purpose of manufacturing wagons and carriages. The capital stock is fixed at $10,000.

FIRES.

Fire caused a loss of $1,000 in the carriage factory of S. G. Gay, Ottawa, Ill.

The Brown Carriage Company, Cincinnati, Ohio, has suffered a small loss by fire.

The Cook Wagon Company's plant at Marion, Ohio, suffered a $5,000 loss by a recent fire.

The carriage shop of D. Bailey, in Livermore Falls, Maine, sustained a $2,000 loss by a recent fire.

VANDERBILT'S SUCCESSFUL COACHING TRIP.

The reception accorded Alfred G. Vanderbilt and his coach "Venture" on his recent coaching trip in England from London to Brighton has never been equalled. Thousands of enthusiasts waving English and American flags lined the entire course, a distance of fifty-six miles. No such interest was ever before dsplayed in any coaching trip and it shows how deeply the love of the stage coach is engraved in the English heart and how strongly the friendship of the two nations is cemented.

TRYING TO INDUCE A WAGON CONCERN TO MOVE.

The Board of Trade of Nashville, Tenn., is endeavoring to induce the Florence Wagon Works, of Florence, Ala., to locate in that city. It is believed that if the people of Nashville will put up a stock subscription of $100,000 it could be induced to change its base of operations.

IT IS NOW THE DEAL BUGGY COMPANY.

J. J. Deal & Son, vehicle manufacturers of Jonesville, Mich., have recently incorporated and in the future the firm name will be the Deal Buggy Company. Jacob J. Deal is president and George V. Deal secretary and treasurer. No change in the management or policy of the business will occur.

Some good mechanics can't do much of a job of making their own opportunities.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

Automobile Clubs.

One of the side influences deserving of a passing notice is the social influence of the automobile as exerted through the automobile clubs, upon the membership and the families of members. The club buildings are frequently palatial. Even the smaller houses are home-like and attractive. They draw as a magnet men of otherwise diverse tastes and occupation. They bring women together of neurasthenic temperaments often who stand in urgent need not only of outdoor riding and its stimulating and care-scattering influences, but of that practical and informal sociability which centers in the automobile and its environments.

The automobile has drawn into the lives of thousands of people a new life-giving element and stimulus which acts better than pills and potions and exerts an influence on mentality in broadening conceptions and understandings which no other agency could as directly effect.

Repairing Charges.

In response to a number of widely scattered inquiries as to the modifications in repairing charged for carriage and wagon work, it is possible to state that there has been a gradual improvement, a moderate scaling upwards and a tempering or toning down of the bitterness of competition which has formerly prevailed. In localities in eastern Pennsylvania, in sections in northern Ohio, very largely throughout Indiana and Illinois, and in some towns and cities of Michigan, price-lists which have established a more remunerative level of charges have been very generally respected.

Our information does not show that this betterment is universal. It does show that where organization among carriage and wagon builders prevails and where these local organizations have addressed themselves earnestly to the task, that repair charges are nearer what they ought to be and competition or cutting under is less prevalent.

If carriage and wagon builders cannot establish better prices now, they will never establish them.

Automobiles Abound.

Shows, displays, races, demonstrations, tests, and all manner of means and measures for making the automobile a factor in modern life, social and commercial, are to come off this year in greater number than ever, not only in the United States, but throughout the world. The development of interest in the automobile in other countries than our own—all over the world in fact—is one of the interesting and suggestive features of the time. Egypt, India, China and less familiar regions are developing an automobile craze, or rather an interest which exemplifies the observation that human nature is about the same everywhere. The automobile addresses itself to all races and colors of men, and its possession betokens a spirit of progress.

The foreign press notes frequently the spirit of enterprise shown in all countries in the establishment of show rooms of American magnificence, of preparation for races which are especially encouraged by government officials and merchants, and of demonstrations and comparative tests, which show that the automobile is becoming a vital factor in the lives of the people everywhere.

Show Expenses.

Automobile manufacturers are beginning to feel the pressure of expense of shows. The carriage builders in years past have had similar experience. This is an evil or abuse to the extent that it is an evil or abuse that cannot be readily met.

Besides, it may be a mere matter of opinion whether expense incident to frequent shows is undue or excessive. It depends upon the point of view and upon the understanding of the definition of the word enterprise. One concern may be willing to go to much greater lengths than another in the matter of expense. In a broad sense, the more shows the better. The public has to be reached, aroused, interested. Its interest has to be kept at boiling point. Interest in the automobile and in automobiling must not or should not be allowed to flag. In this sense the expense of shows cannot readily be run to an extreme. Yet there is an undercurrent in some directions against the steadily increasing expenses in the conduct of business growing out of increasing automobile shows.

Garage Fires.

There have been so many garage fires, some of them involving quite extensive losses to say nothing of serious inconvenience to owners of automobiles, that insurance authorities have felt it necessary to unitedly take up the problems of garage insurance and promulgate some new regulations with reference to conditions of insurance.

The most frequent cause of fires is in connection with repairing and testing machines. The insurance people have by patient investigation satisfied themselves that carelessness and indifference enter into the causes as well as the latest and partially unavoidable causes. They propose to insist that automobiles shall not be run into garages by their own power, this including steam-driven machines. They do not favor the cleaning of automobiles with gasoline in the building, nor on the roof, from whence the heavy constituents of the fluid would descend. They regard the electrics, naturally, as the least hazardous. They propose to prohibit the presence of a dynamo or gas engine where gasolene is stored or handled, and they will insist that oil tanks be emptied before entrance.

There are a number of other proposed minor regulations calculated to minimize the possibilities of conflagration, all of which are based upon practical common sense.

Digitized by Google

Negligence regarding these features has caused numbers of fires. They argue that these regulations are no more than are reasonable and necessary and that they can be adopted by garage owners without interference with the efficient management of their property and to a saving in losses and in cost of insurance.

There would seem to be just cause for action along these lines. Repair work is wanted in a hurry and the habit of carelessness is unconsciously formed by the workmen. In carriage factories there are well-established rules, especially in the paint departments, for the prevention of even the possibilities of fires. It would be well if a similar degree of care and caution were exercised by the proprietors of garages.

Boulevards.

Discussions regarding the wisdom of creating magnificent roadways in or near cities and between nearby cities are heard outside of automobile clubs. Reference has heretofore been made to several projects looking to the construction of what, for want of a better term, are called boulevards, especially for automobiles. One of the latest enterprises of this sort is being taken up by the municipality of Paris. It is no less than a scheme or purpose to construct a wide roadway, with all that skill can make it, from the Tuilleries Gardens to the forest of St. Germain, ten miles, where Parisians fan themselves on hot days. The plan is to not only make it a highway for automobiles but to have it afford accommodations to pedestrians, wagons, carriages and street cars, each class of travel having its separate strip. Then the automobiles can whirl the dust into the faces of pedestrians and carriage riders without fear of the law. The St. Germain terminus will be garaged to accommodate any volume of travel.

What Automobile Dealers Want.

The retail automobile dealers are getting together in some sections and find questions and problems of sufficient mutual interest to make association worth while. The entire business seems to need a basis of common understanding and as much united action as possible. The retailers are just entering upon the consideration of some questions which have given the carriage dealers food for thought for years. One of them is selling of work by wholesalers to consumers or users. This question was handled recently at Chicago by the National Retail Dealers' Automobile Association, which was attended by some two hundred dealers.

They argued that because of the large number of retailers there was no occasion for direct selling—apart from any reference to the question of fairness to retailers. Sentiment was unanimous on this point. They argued that it was to the interest of the manufacturers to allow the distributors to remain in sole possession of the field. The argumentation along this line is thoroughly familiar to all trades and to manufacturers as well, and the arguments cannot be easily overthrown. The dealers also agued in favor of their right to handle sundries, which have come to constitute such an important part of the business.

The manufacturers have not been heard from. When they started in business there were no dealers to handle their work. The dealer is a late phase of the situation. He is a newcomer. For a long time he was not needed. There was no show for him. The manufacturers have made the dealer a possibility. They have at great expense built up the industry, have popularized the automobile through shows and exhibitions and races which they quietly backed. In a score of ways they have been expending their good money to make a market for their product.

And now after years of expensive enterprise in popularizing this mode of conveyance they are invited by a suddenly-appearing crop of dealers to step down and out, as it were, to attend to their own business, and are told that the dealers will look after the selling of their product.

Some of the manufacturers may regard the advice as refreshing at least, under the circumstances. The manufacturers have found it necessary to establish branches at considerable expense and to do a great deal of missionary work. Whether they will accept the advice of the dealers or not is further along.

The dealers on their side have something to say. They are a force. They can do a great deal. They are renting and conducting extensive show rooms and are sharing the expense of pushing the business and extending possible markets. The manufacturers need them, not only because manufacturing is one business and selling another, but for some other pertinent reasons.

THE FARMER AND THE AUTOMOBILE.

"Why should a farmer keep two or three teams and slowly drag his produce to market, when one automobile farm wagon will do the work more cheaply and quickly, in a humane and moral way?" asks an automobile enthusiast, and the Motor World asks in reply: "Why does not some one build such a machine?" Granted freely and gladly the three saving graces of the automobile in a revolutionary way, and granted even more—that these are an accomplished fact, and not a pleasant dream—the fact remains that at present the ordinary farmer has not a fair chance of replacing his horses and wagons with a perfectly suitable equivalent. He may invest in any one of a dozen or so of motor trucks, any one of which is suitable for heavy duty under certain conditions, each of which is the product of good engineering practice, and each of which will replace from two to three horse-drawn wagons, if given a fair chance. But, counting all the limitations to their service which a perfectly fair judgment must acknowledge, probably none of them offers inducements such as to make them very attractive to him for the routine work of the farm.

The farmers' automobile, the light vehicle especially adapted to rural use, is a present-day reality, and whether a permanent type or not, is finding favor with the rural user. The farmer's wagon must be built along the same lines, psychologically, at least, in order to meet with an equally cordial reception. The motor buggy appeals to the farmer, because, first of all, it is a buggy. The motor farm wagon must also be a wagon first and always, in order to meet with complete approbation in the country districts. Not that it must of necessity have the outward semblance of the typical farm wagon in every respect, but that it must be staunch and simple; that it must not constitute too much of an innovation in the vehicular line. The farmers' wagon must be able to negotiate the stubble field, the woods road, the cart track, and the sandy highway with equal impartiality; it must be safe in operation, not given to setting fire to highly inflammable loads, simple to maintain and easy to understand.

The stack of discarded mowers, harvesters, threshers and pumps behind many a wayside barn, and the idle windmills in the fields are monuments to misguided investments and inability to comprehend the requirements of machinery which is lamentably prevalent. But it shows that a market for farm machinery exists, quite as well as the opulence of the reaper trust shows it. The rural attraction is a strong one on the market, but it is wiser to encourage its lasting development than to handle it with regard to present sales alone. The farm wagon proposition is, beyond question, a winning proposition. But it must be handled on a wagon basis, because the farmer thinks in terms of wagons, and he must be approached in his own language.—Farm Machinery.

Digitized by Google

RESULT OF BRITISH PATENT LAW.

With a view of forcing foreigners who obtain American patents and sell their product here, also to build factories for the manufacture of at least half of their American output, Representative B. K. Focht, of the Seventeenth Pennsylvania District, last month introduced a bill in Congress to amend the patent laws. He believes this act will result in the next few years in considerable additions to the volume of American manufactures and necessarily give employment to thousands of workmen. The bill is modeled after similar laws in England, Germany and Russia. Millions of dollars' worth of articles protected by American patents are exported annually from European countries and sold in the United States.

Some years ago when the Westinghouse Company opened up business in Russia, it was compelled, in obedience to the Russian law, to erect extensive factories there at a cost of several million dollars. As a result of the new English law, a large number of American concerns have been obliged to build factories there. In Europe foreign manufacturers are obliged to manufacture all the patented articles sold there within the respective countries.

Under the British Patent Act, which went into effect January 1, 1908, no foreign invention can be patented and no patent already issued holds good unless the patented article or process is made or carried on in the United Kingdom. A number of German firms have purchased sites and are preparing to establish branches of their industries in Great Britain. The result will be to enormously increase the capital invested and to provide employment for many thousands of British workmen.

It is predicted that the Focht act in operation in this country will produce most beneficial results in the industrial and labor world, causing the erection of thousands of factories and stimulating the demand for American labor.

NEW MOTOR FUEL BENZOL PROVES SUCCESS.

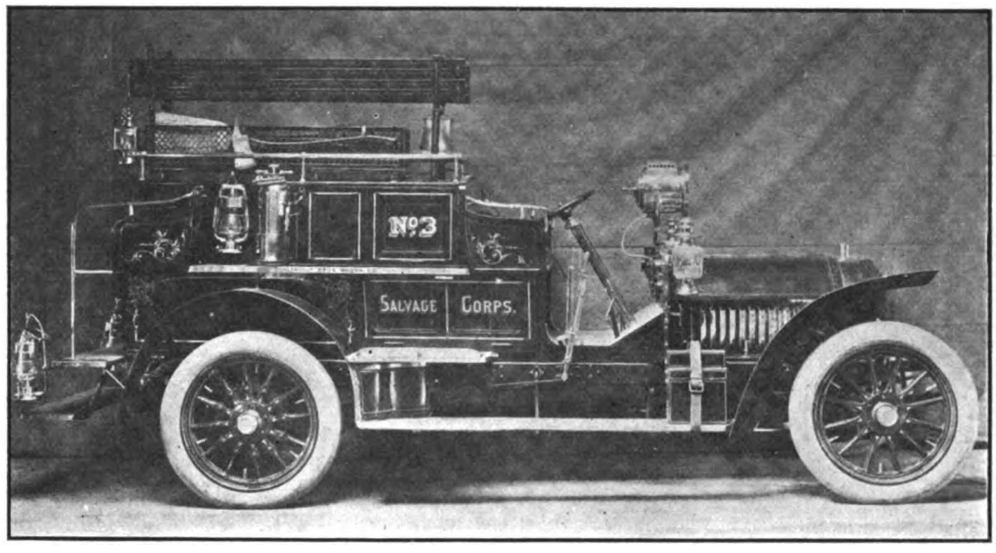
Interesting tests of benzol as a fuel for automobiles have been conducted during the past month in New York by Joseph Tracy, a well-known race driver and consulting engineer. A comparative test of gasoline and benzol was made upon the new dynamometer of the Automobile Club of America. As a result Mr. Tracy announced that he was convinced that the fuel question was settled and that American automobilists need have no fear that the expected scarcity of gasoline would cause any hindrance to the spread of automobiling in the next few years.

In Europe a shortage of fuel has been feared and experiments with alcohol, benzol and a number of other substitutes for gasoline have been conducted for several years. The Royal Automobile Club of Great Britain recently published a voluminous report on benzol and many private experiments have been conducted.

The tests above referred to were made with a Simplex runabout, which was put upon the drums of the dynamometer and run first on gasoline and then on benzol. The results proved that the two fuels were absolutely interchangeable, even without any adjustment of the carburetor, the use of benzol producing slightly better horse power and draw-bar pull. The car was geared high and special attention was given to the results as shown on the gradometer.

With gasoline it was found that power sufficient to climb a hill of 11.9 per cent. was developed, and with benzol the possible grade was shown to be 12.1 per cent. This was a marked gain, and as it was maintained for a considerable period, was a clear demonstration of the greater efficiency of benzol. With a special adjustment of the carburetor, the gradometer showed 12.2 per cent., while the draw-bar pull increased to 398 pounds as opposed to 383 pounds with gasoline.

Benzol consists of a mixture of benzine, toluene and xylene and has a specific gravity of 885 degrees. It commences to distill at about 176 degrees and does not completely distill over until nearly 243 degrees Fahrenheit is reached. Its caloric value isabout 20,000 B. T. U. and it contains about 8 per cent. hydrogen and 92 per cent. carbon. Benzol is produced as a by-product in the manufacture of coal gas and is water white in color.



Salvage Corps Gasoline Car.
Designed and Built by Uhlenhaut Bros. Co., St. Louis, Mo.

H. H. FRANKLIN CO. TO MAKE GASOLINE TRUCKS.

In a quiet way, the H. H. Franklin Mfg. Co. has been studying the commercial vehicle problem from a practical standpoint, and as the result of its experiments and inquires has now undertaken the manufacture of commercial vehicles of the gasoline-driven type on a large scale. "The development of the motor truck and motor vehicle has been slow," said H. H. Franklin in an interview. "The vehicles have lacked stability and have not been as economical as horses. From the start we have kept a careful record of all operating, repair and maintenance expenses, and now have commercial vehicles more economical than horses. We expect that our commercial car department will give employment to 1,500 additional men inside of three years."

The line of commercial cars that the Franklin Company will place on the market for the season of 1909 will comprise a light delivery wagon of 1,000 pounds capacity, suitable for dry goods,

Digitized by Google

grocery and other forms of light work, a 3,000-pound truck for ordinary usage, and a 4,000-pound truck for slightly heavier work. Various forms of bodies will be put on these chassis, so that the line will include hotel 'buses, ambulances, patrol wagons, and the like. Taxicabs will also be included and the company is now said to be working on an order for these cars for one of the leading New York companies.

UNPRECEDENTED POPULARITY OF THE TAXICAB IN LONDON.

A year ago the taxicab was an unknown luxury to the average Londoner, says the Daily Express, of that city, but in a few months it has noiselessly glided to the front. Here are some interesting figures showing how the "taxi" is forging to the front:

Capital invested in London taxicabs, £2,000,000; taxicabs on the streets, 758; taxicabs on order, 2,600; licensed drivers, 1,700; certificates granted each week—average, 55; number of London taxicab companies, 8; average day's takings of a taxicab, £2 6s.

At the corner of the Brixton road, by Kennington gate, stands the largest taxicab garage—the latest of London's wonders. It was built originally to accommodate 2,000 cabs, but the success of the flying "taxi" has so far exceeded the most sanguine expectations that this space was far too small.

As first erected there were two floors, but a third story, to which the taxicabs climb to bed, had to be added, and fresh premises are to be built around the corner in Camberwell Newroad for five hundred more cabs now on order.

The size of this giant garage may be learned from the following figures: Area, 6½ acres; length of each floor, 160 ft.; width, 40 ft.; number of departments, 24; total accommodation when completed, 3,000 cabs. These figures only apply to one of London's motor cab companies.

More than half of the £2,000,000 invested in these companies is represented by three concerns.

When all the new taxicabs are darting in and out of the London traffic there will be more than 4,000 of them of variegated hues. Any Londoner prepared to spend eight pence a mile will be able to take his choice from the multi-colored fleet of taxicabs and be whirled to his destination like a millionaire of the old days.

The average cost of a London taxicab is less than £350, and its average takings are about £16 a week. The fortunate chauffeurs, who are the leaders in the new movement, are delighted at the prospects. Some of them are already buying their own taxicabs on the instalment system out of their tips.

THE G. & J. TIRE COMPANY LOSES ON APPEAL.

The tire patent decision in the case of The Gormully & Jeffery Tire Company vs. The Pennsylvania Rubber Company, rendered at Pittsburg on Sept. 9, 1907, by Judge Joseph Buffington, in the United States Circuit Court for the western district of Pennsylvania, failed to sustain the assertion of the plaintiff that the patents upon which the suit was based had been infringed. This decision was appealed from to the United States Circuit Court of Appeals for the third circuit, in which the decision of the lower court has been affirmed. The opinion was written by Judge James B. Holland, of Philadelphia, and filed in the office of the appellate court clerk in that city early in April.

The original suit was based upon four patents, granted at different times to Thomas B. Jeffery. The burden of the Pennsylvania Rubber Company's defense was that of non-infringement, though they admitted that their tire was similar to that described in the patent of William Golding, No. 493,160, dated March 7, 1893, which was also the property of The G. & J. Tire Co., but which expired and became public property before the defendants began the production of such tires. The Golding invention was patented both in Great Britain and the United States, the first application having been made in the former country. The United States patent, therefore, under the statute then in force, expired simultaneously with the British patent, instead of running for seventeen years, which would have made the date of expiration March 7, 1910.

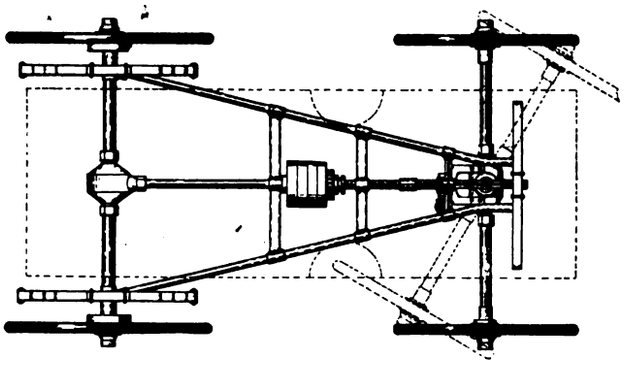
Judge Holland, in his opinion, quotes at length from the former decision by Judge Buffington, to the effect that the Jeffery patents had not been infringed. The point is made that the tires produced by The G. & J. Tire Co. differ from the specifications in the chief Jeffery patent, and that the imitation of such tires does not constitute infringement of the patent. Both parties to the suit, however, have used the attaching device described in the Golding patent, already referred to as having become public property, so that such use at a later day by the Pennsylvania Rubber Company is not an infringement.

It is understood that The G. & J. Tire Co. does not accept the latest decision as final, though it has not been decided what will be the next move in the matter. The company holds, it is understood, that Judge Holland's decision rests upon a wrong conception of the scope of the Golding patent.

APPLYING DRIVING POWER TO BOTH FRONT AND REAR AXLES.

The Patent Office recently granted to William W. Wainwright, of Connersville, Ind., a patent on a gear for a motor vehicle, wherein the driving power is applied to both the front and the rear axles.

This invention relates particularly, however, to the means for driving and steering the front axle. Said axle and its attached parts may swing—as indicated in diagram accompanying—about a vertical axis located at its center, where there is supported a shell which forms a part of the front axle structure; or, rather, of the inclosing casing in which the front axle proper runs. This casing is composed of two parts, as shown; and the structure is tubular at its ends and is exteriorly threaded and said ends are tapered slightly at the points where threaded. They are held together at these threaded points by suitable nuts which are like-

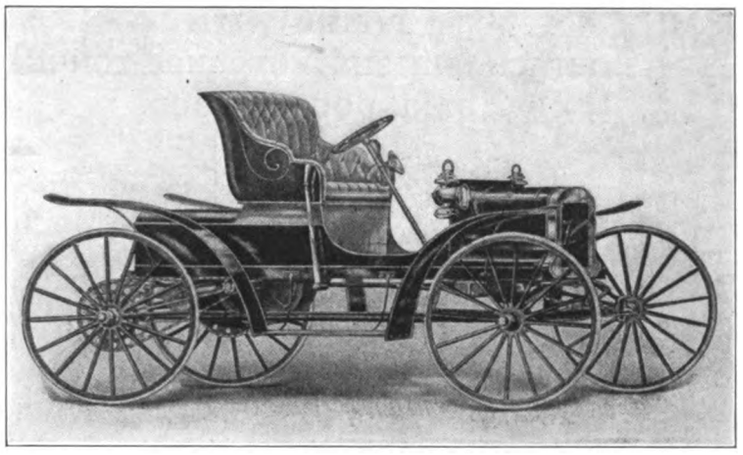


wise slightly tapered. By means of these the two parts are drawn together very tightly, so as to make the inclosure liquid tight. Continuing each way from this central structure are tubes which inclose the axle proper, and extend between said structure and the wheels.

The front axle proper is composed of two parts which are sleeved together. At the point where the tubular portion terminates it bears a spur gear, and adjacent thereto on the axle is a similar spur gear. Surrounding these two spur gears is a housing which carries two pinions which engage with the spur gears. As the ends of the axle advance and recede relatively to each other, these gears operate as an equalizing connection between the two axle parts, compelling an equal number of rotations of said two parts, generally speaking, but permitting them to move with relatively differing speeds, as the axle carrying them swings on its vertical pivot, during the operation of steering. The patent number is 886,098.

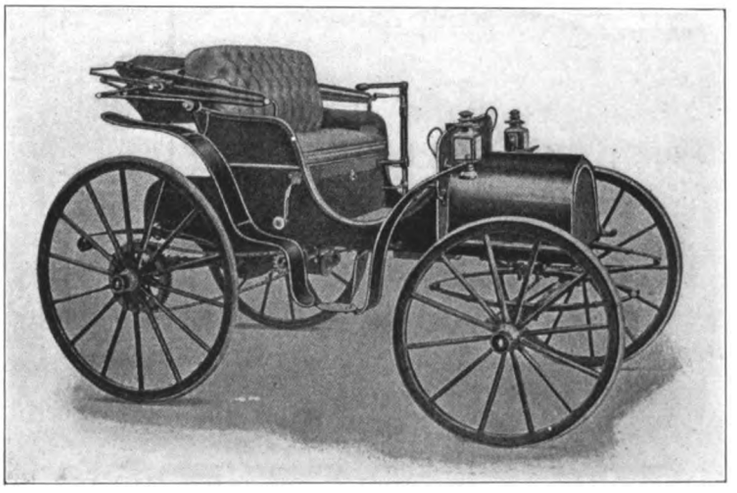
Digitized by Google

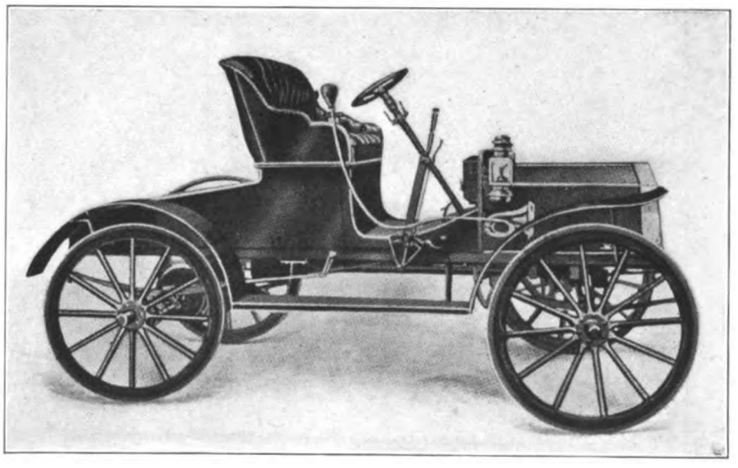
Illustrated Automobile Section, May, 1908.



THE "ZIMMERMAN" AUTO RUNABOUT
Built by
ZIMMERMAN MFG. CO.,
AUBURN, IND.

THE "FIRESTONE" MOTOR BUGGY
Built by
COLUMBUS BUGGY CO.,
COLUMBUS, OHIO.

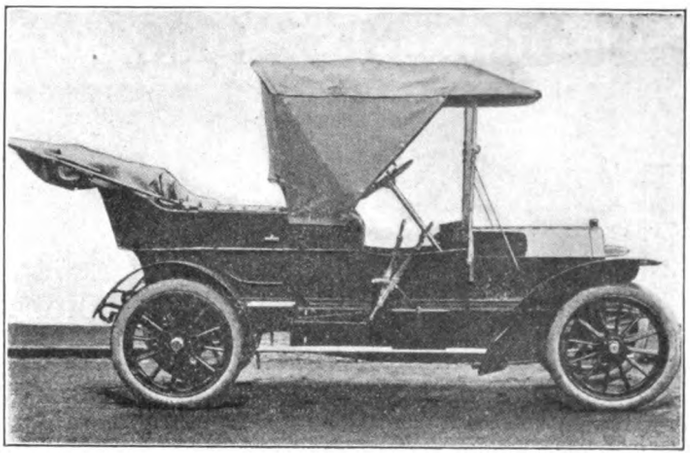




THE "JEANNIN" MOTOR RUNABOUT
Built by
JEANNIN AUTOMOBILE & MFG. CO.,
ST. LOUIS, MO.

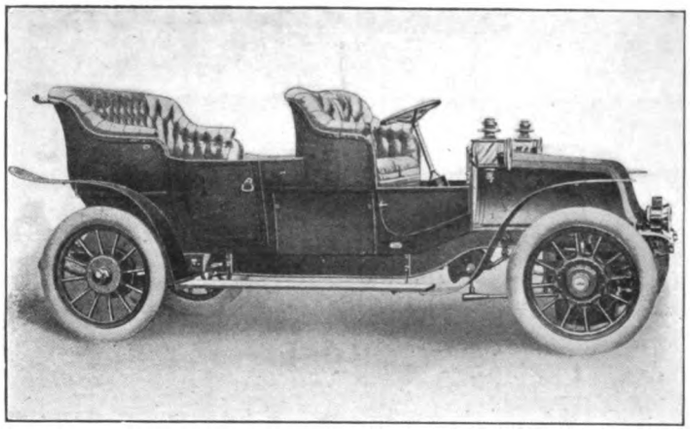
Three New Arrivals in the Motor Buggy Field.

Digitized by Google



FITTED WITH
DETACHABLE SIDE-ENTRANCE TONNEAU
AND DOUBLE HOOD.

SHOWING THE
DROP GIVEN TO SOME FOREIGN
CHASSIS FRAMES.



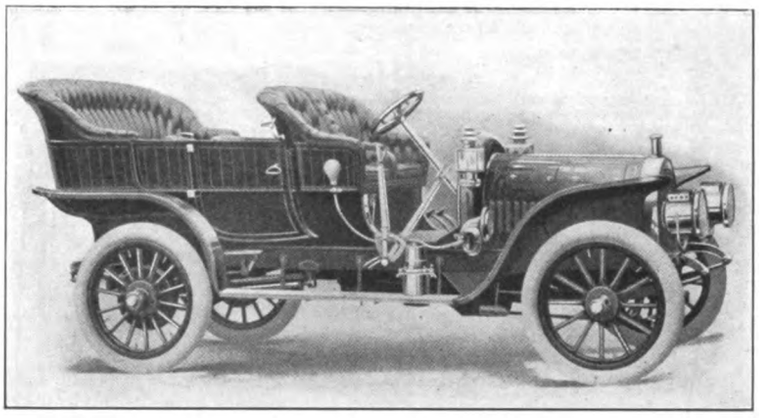


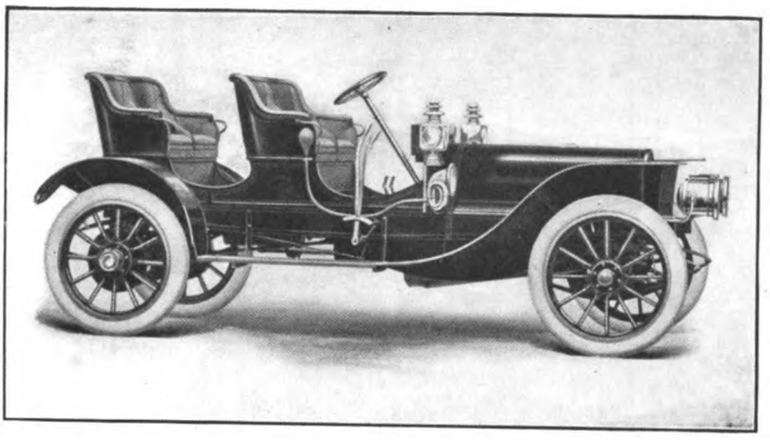
THE PECULIAR
CONSTRUCTION OF A GERMAN
DELIVERY CAR.

Novel Features and Designs of Foreign Cars.

Digitized by Google

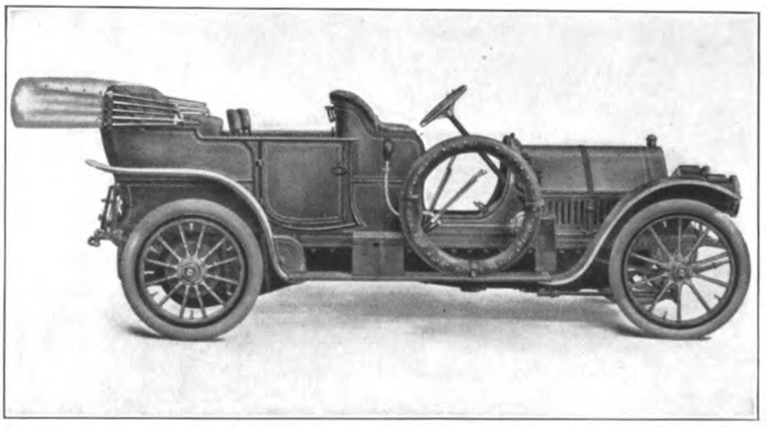
THE TULIP
ROYAL TOURIST FORTY-FIVE HORSE-POWER CAR.





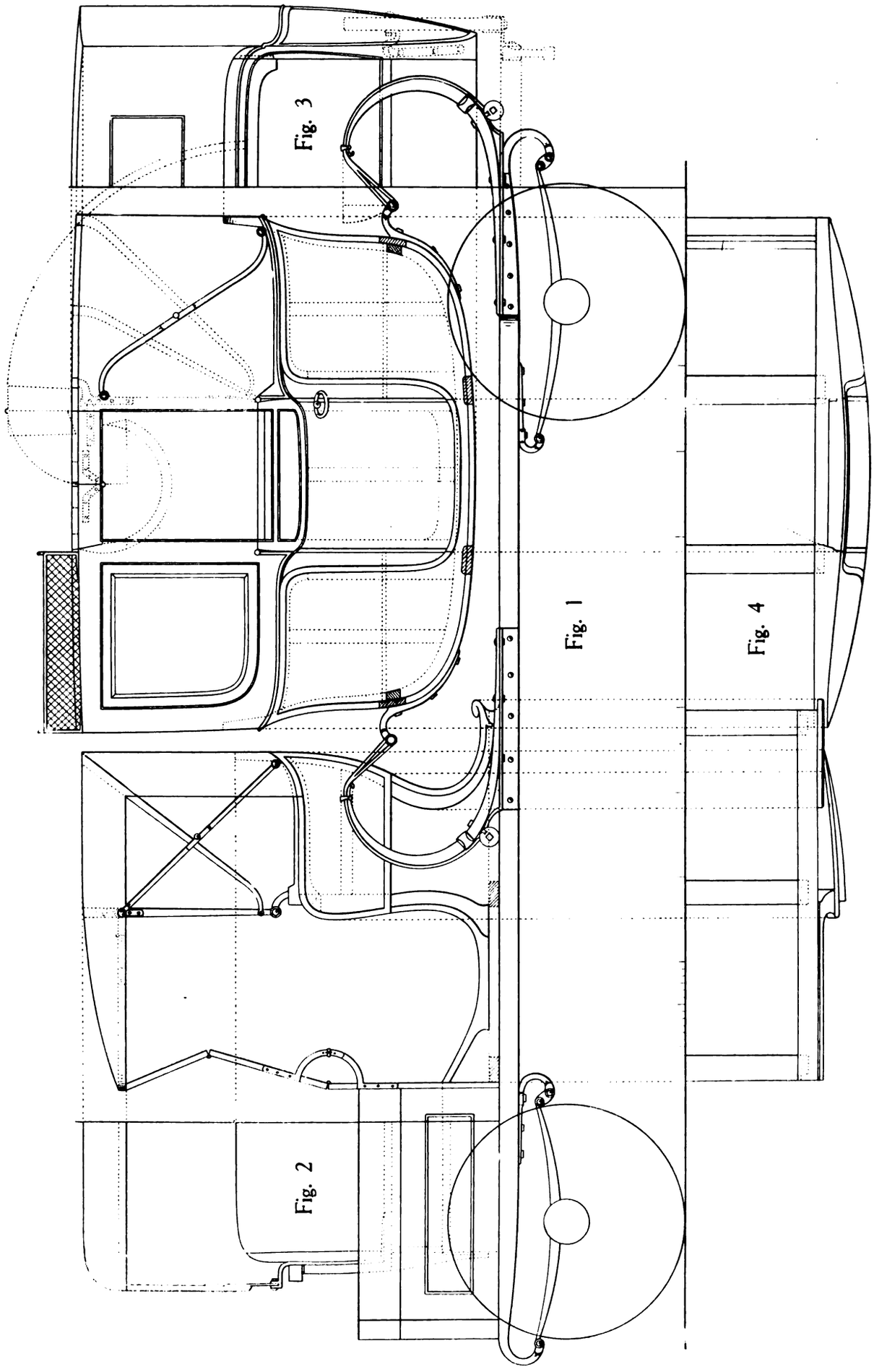
TYPE H
FORTY-TWO HORSEPOWER FRANKLIN RUNABOUT.

TYPE XVII
FIFTY HORSEPOWER POPE-TOLEDO TOURING CAR.



Three Popular 1908 Runabout and Touring Cars.

Digitized by Google



WORKING DRAFT OF LANDAULET BODY HUNG ON C-SPRINGS.

Scale, ⅝ in. to the foot.

Described on opposite page.

Digitized by Google

Body Construction and Finish

DESCRIPTION OF WORKING DRAFT OF LANDAULET BODY HUNG ON C-SPRINGS.

Drawings on opposite page.

Although the advance of the motor car in its every department of supply has been rapid and changing, still there is an ever sensuous gnawing appetite in the public mind craving for simplicity of power and its control by mechanical agencies, which inventors are continually endeavoring to bring into practice.

So that these borings, which are at constant work, cannot be other than fruitful in widening the area of their informative plane, and so, stey by step, the summit of higher altitudes and excellencies of mechanism and artistic finish are continually advancing side by side as rivals for the mastery.

And thus it is in designing the bodies of motor carriages, because each accepted design is, for the time being, only a goal that has been reached. But there is ever in the human mind an endeavor to answer the impulse that fires the energies to further achievements in grace of form and general consistency of harmony.

In the designer it is the effort to produce something better than preceding lines—lines that have a quicker life-giving effect on the senses, and by this force cut a niche in the line of advance, and so establish their claim to the position. These are the impulses that urge the designer forward to produce more pleasing formations, through which style is formulated and fashion set upon a solid basis.

The trend of motor carriage design is to bring the vehicle as near to the horse-drawn carriage as is possible, and to infuse the old associations and traditions of coach making into the vitals of motor body outline and construction.

The defective suspension of motors has been as great a drawback to their full success quite as much as the skidding of tires, or engineering shortcomings, and other technical defects. This is quite understandable, because carriage building engineering is very different to motor engineering. A good carriage building engineer suspends the vehicles his reputation hangs upon with technical skill, so that the pliancy of springs and the draught of wheels will all fall into their line of order when under weight and speed. But in the hanging of motor cars suspension has been to a very great extent an unknown quantity. The correct distribution of weight and the buoyancy of springs in floating the weight in proper undulating time over obstacles and the surfaces of roads, the rhythm of various shaped springs in response to the quickened action of speed, are points that have set themselves for practical solution to chassis makers.

Those who use the motor carriage have had experiences that motor engineers have failed to explain away—because of their failure to measure the balance of road vehicular locomotion as evolved in the motor carriage.

It is the experience of motorists that the easiest riding cars are those whose wheel base is sufficiently long to take the weight between their points of contact with the road. The chauffeur's seat is acknowledged to be the pleasantest for seating comfort. It is a considerable distance from the center of the front wheels, and shocks and vibration have a longer wave curve to travel before they reach the seat, while the springs and tires of the wheels buffer the shock so that its effect is nullified. Hence these disturbing elements are killed before they reach the base of the seating space in front. It is, however, very different in the hind seating of the body, because the position of the hind wheels are brought nearly under the seat line, while the diameter of the wheels render doors in many bodies to be made to suit the position of the wings in the hanging. The main object apparently being to bring the wheels as close together as possible, quite irrespective of the matter of correct balance or draught in road travel, while the seating comfort from these hanging conditions at the rear of the body is not sufficiently studied and left, in a measure to take care of itself and work out its own salvation.

Motorists are loud in their complaint of the discomfort of the hind seats of cars so badly suspended, and it is they, as the practical experimenters, as well as the buyers of these carriages, who are the real instructors of the motor builders in needed alterations, whether in comfort or in speed and its attendant accessories.

The original design of motor body which we give here is suspended on C-springs, a method of hanging that prevents shock or vibration reaching the occupants of the body, because it is cut off from contact with the chassis, and any vibration traveling along the springs is completely insulated by the leather braces, so that for every riding purpose the C-spring method of suspension is the only perfect one. It is an old method of suspending carriages, which the motor, as a carriage of luxury, will in the future draw largely upon for a solution of complete isolation from the annoying effects of speed, bounding and vibration, which is such a defect in the road traveling of this carriage.

To take the base arms of the C-springs, angle plates are forged with a top flap, which projects from the chassis to the platform bearing width of the Cs. These are made 4 in. wide, and a flap end is forged to take the heel bearing of the spring, and windlass for tightening the brace or shortening it, as the case may be.

The suspension of a motor carriage upon C-springs lifts it out from the category of automatic locomotion and places it in a direct line with the more attractive and life-giving design and appointments of a horse-drawn carriage of similar characteristics.

The under works of the chassis are hung upon grasshopper springs, which are of sufficient length to yield a long wave deflection, a quality so necessary in motor hanging. A short-actioned spring is too responsively quick and generates jerking and lifting, and when this defect is linked to a chassis abnormally short, motoring under such constructional conditions becomes a perfect penance instead of a pleasure.

Body.

The draft illustrates in Fig. 1, front elevation; Fig. 2, half front; Fig. 3, half back; Fig. 4, half plan. The body, as a design, breaks new ground. The outline curves may be aptly termed gondolic, the corner pillar and bottomside lines merging in their curvature.

The door pillars are panel bored, and mouldings worked up to form the back and front quarters. The pillar lines cut up the massiveness of the body and show up its distinct features in these lines of delineation, which finish in a valley curve along the bottom of the bottomside and door line. The front top quarter is made with coach side-light; there is also a light in front. The quarter light can be made to hinge up to the roof, where it can be held with light spring catches or made to drop down into the body quarter. The front light can also be made to drop down in the front of the body, or the glass frames can be in two parts and made to slide to one side, in the same way as the front glass frames of a single brougham are frequently done.

The door is made same an ordinary landau door. The moulding on the bottom is worked on the framing, instead of being left on the bottomside; of course the door shuts on the top of the bottomside, in Barker brougham style, yet distinct from it. The back and front elbows are made to symmetrize on their top

Digitized by Google

line, with the belt rail line of the door, thus maintaining the character lines of the body's design. The head is fitted with landaulet flaps to fold up with the half head when down.

The front body is of course made distinct and fixed rigidly to the chassis. The design is in strict conformity to the hind body in its curvature. In the bottom quarter it is made in solid sides, and the back and front pillar pieces fixed to the side with screws from the inside. The back piece is also fixed to the side in the same way. At the bottom part these fittings project ¾ in., and the panel surfaces are boxed back, thus allowing the mouldings to stand up. The top seat quarter is framed and paneled throughout, as a cabriolet quarter is framed.

The seat is fitted with hood and side jointed to position. The front horizontal slat is made to slide down on a rod fixed to the inside of the upright slat, and to hinge up level with the top of the upright slat when it is desired to have the head down. This method of head fitting has already been explained in the working drawings on head fitting recently published in The Hub.

The wind shield is made with hinged sections. Wind screens made in this way are much better than rigid upright ones. The angles at which the hinged sections can be pitched make them better breakers of weather force, while rain cannot act so violently on an angled surface, nor find a lodgement.

The covering of the hood is of light waterproof twilling, in the back of which is worked a window of celluloid. The head can of course be made to take off, instead of its being a permanent fixture.

The whole design and construction is a rapid stride in advance of present motor carriage fashions, while it evinces a strong originality in its general conception, both in design of body, distribution of weight and hanging on chassis.

The sizes are: Length of chassis from front of dash to back, 10 ft. 8½ in. Front body, length on bottom side, 4 ft. 6 in; from dash to seat, 24 in.; width of seat, 20 in.; depth of body side, 15½ in.; depth of top quarter on pillar line, 13 in.; full depth at back, 17½ in.; width of body on bottom, 37½ in.; width on seat, 42 in.; width across top of pillars, 44 in.; at back on elbow, 40 in.; depth of head on front slat line, 43 in.; width of canopy slat, 24½ in.; width of head over all, 4 ft.

Rear body or body proper: Length on elbow line, 6 ft.; width of hind quarter on elbow line, 25½ in.; width of door, 22 in.; width of front quarter on elbow, 24½ in. depth of back and front quarters on pillar line over mouldings, 27 in.; depth of seat, 13 in.; width of same, 21½ in.; height from top of slat to under head slat, 43 in.; length of top head-quarter from front of pillar at flap joint, 27½ in.; length of front quarter, at top, to inside of door line glass frame pillar, 27 in.; width of light in front quarter, 20 in. by 22 in. deep. Length of luggage rail guard, 25 in.

Width of body on bottom on standing and shutting pillar lines, 44 in.; across elbow line, 51 in.; width on seat, 42 in.; width across back on elbow points, 40 in.

Size of back light, 10 in. by 19 in.; size of front glass frame, 15½ in. by 30 in., either to hinge up or to drop down into the body.

WASHING AND CLEANING THE AUTOMOBILE SURFACE.

To an unusual extent, as compared with most other vehicles, the automobile body is invested with difficulty in washing up preparatory to varnishing. It is, for the most part, a surface of big outlines, of many moldings, of unfamiliar contour. And, apparently, it has inexhaustible resources for catching and retaining dirt, etc. So that taking the washing job in all its varied and infinite details it belongs particularly to the skilled class of labor.

The best varnishers and finishers compliment the work to the extent of saying that washing and cleaning the surface is no less important than that of laying the varnish upon it. Which affirmation is true to the uttermost. There are great possibilities for success or failure inherent in this bare and unattractive toil of polishing the surface with a water bath. Skill and enthusiasm, and a finely developed faculty for taking pains, are essentials in the washing up process. To become a good finisher first become a good surface washer with a microscopic eye. Then all else will verily be added unto you.

Secure a supply, first of all, of clean soft water. Use absolutely clean pails, sponges, water tools, wash leathers, etc. Change the water often. Maintain two sets of pails, sponges and tools generally, for first and second washing. Store all of these in clean quarters and make a business of personal cleanliness as well. And in the actual work of washing the surface behold and bear in mind the condition of the hound's tooth.

THE AUTOMOBILE VARNISH ROOM.

Some Essential Requirements Contributing to Its Maintenance —Reforms Needed.

The notoriously inadequate varnish room facilities to be remarked of the average paint shop devoted to a greater or less extent to the business of automobile painting has in the large cities, at least, set in motion a reform movement which promises to work an improvement. Even in New York, the professed home of excellent vehicle paint shops, you may find any number of fearfully and wonderfully inadequate automobile varnish rooms, some of them—fairly a multitude, in fact—located in garages. Plenty of well merited censure has been applied to the system that has tolerated such conditions, but it is but fair to say, in justification of most parties interested, that the whole unfortunate arrangement is due, in large part, to the mushroom growth of the industry. Figuratively, it was yesterday an infant in swadling clothes; to-day it has reached the proportions of a Samson with no corresponding growth of facilities to properly handle it. Therefore arises the necessity which almost on every hand during the past season was to be observed of varnishing the automobile in surroundings ill adapted to actual requirements.

That the varnish room for automobile work should be quite the equal of the horse-drawn carriage varnish room goes without saying. Indeed, if anything, it should excel the latter in all the appointments which unite to make, if not the ideal, then something approaching the ideal, varnish room.

The automobile, on account of its size and the wide reaching dimensions of its surfaces not to mention the high grade of finishing exacted for it, especially invokes varnishing quarters of unmistakable excellence. Not alone should such quarters be large and roomy to the extent of reducing the necessity of moving the work about the apartment to the minimum, but they should be well lighted—exceptionally well lighted, we might say. Light is a great factor in conferring benefits upon the actual work of laying the varnish and in furnishing a drying medium once the surface is varnished. Then, too, there should be some sure and effective method of ventilation enforced. This is doubly necessary in a room where numerous large, freshly varnish surfaces are housed. The necessity of the natural exhalations and gases permeating such a room being rapidly and effectually dissipated is apparent to even the layman, we dare say, if proper and adequate drying conditions would be maintained.

Naturally, the heating arrangements should be of a nature to insure, in cold weather, warm, dry air uniformly distributed. Hot air or steam heat, prefarably the former, should be commanded in sufficient volume to promote all varnish room operations, including the drying of the applied materials.

And cleanliness, that condition that won for the Puritan home a fadeless fame, belongs to the automobile varnish room in a measure unprovided for in the garage shop, and similar refuges. Under the most vigilant system the shop will in the course of time become dirty, but the chief difficulty is to get many of these auto varnish rooms clean, and keep them clean. Location and general equipment have precluded this accomplishment. Let us hope the defect may be speedily remedied. And further, let us all unite to make the auto varnish room in at least most respects worthy of the industry for which it exists.

Digitized by Google

UPHOLSTERING A SIDE-DOOR MOTOR CAR.

Illustrated on this page.

In upholstering an open motor car the high finish of the vehicle in its painting and accessory fittings demand that the trimming of the carriage should lose nothing in its ornate embellishment.

This, of course, has different interpretations. A trimming may in a striking sense be plain in its surface figurings, yet be very rich in its sombre finish, which is also true of embellished workings.

In all art dressings as understood in the wearing of fine clothes or in upholstering a carriage of high-grade design and finish everything of a meaningless or tawdry character must be eliminated, because these traits bear the stamp of mediocrity which spoils the other prominent excellencies a carriage may possess, or the wearing of fine apparel portray. So that every step in carriage manufacture the vehicle under way must be turned out of hand without offensive abnormities.

The design of side-door car herewith presented is of quick and forceful shape, and well suited to show off an artistic design of upholstery. The illustration shows the squabbing from the front of elbow, set out in column pleatings and finished in gothic copings, while the roll is pleated in line with the center points of the coping. This feature is carried right around the back squab from the elbow line of the body. The front part of the squab is left plain, the pleating being in line with the columns.

The columns at their center points are buttoned, also along the bottom of the squab and on front pleatings. At the front of the squab a panel center is made in which a card pocket is worked and edged with one-inch welting. The door is set out in narrow column pleatings, the squab being also margined with one-inch welting, while the pocket is made of plain surface and shaped to the design shown in the drawing. The flap is heart-shaped, and the margin worked to width in stitching. The squab makes a smart and artistic dressing to the door.

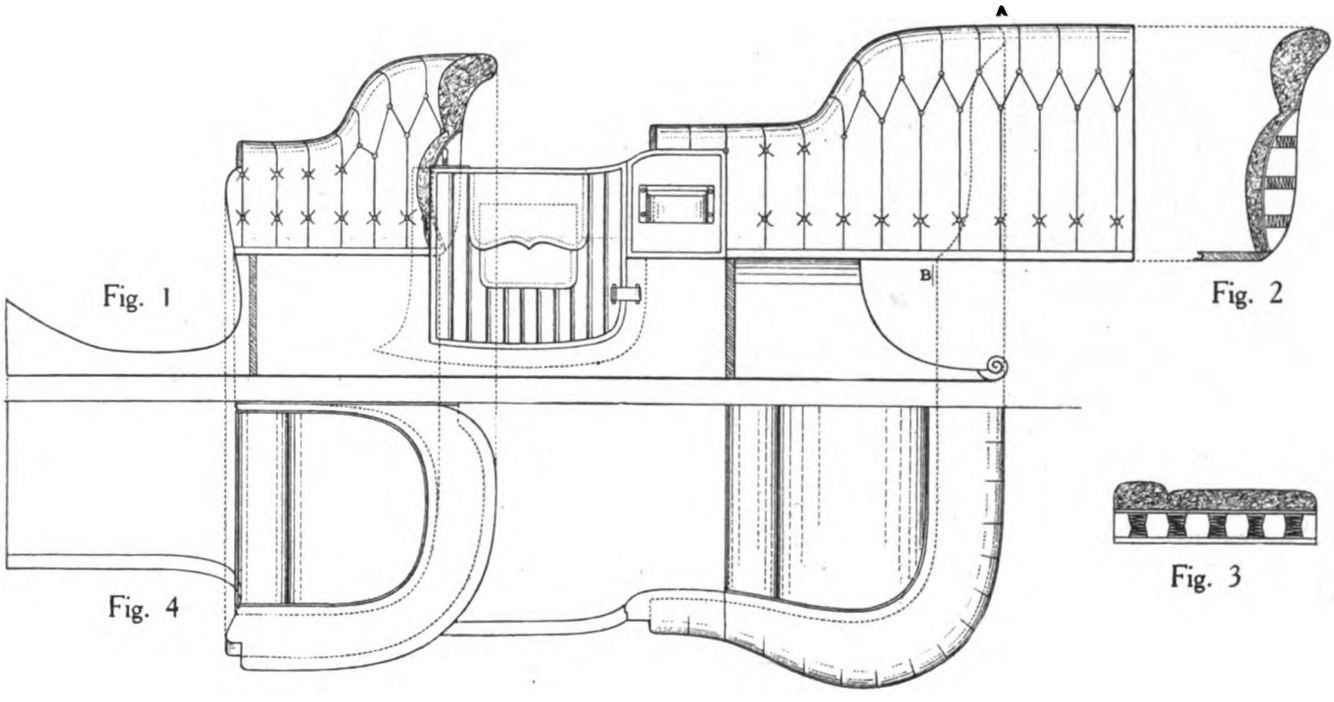
The front individual or bucket seats are set out to match the hind squabbing. The stuffing of the squabs, in bringing out the lines of the design to a clear and bold prominence, is where the practical talent of the trimmer shines. For the sense of feeling is not given to every man and it is the possession of this faculty, by one man over another, that renders the upholstering of a carriage such a success in striking the senses; or mars its effect, in appealing to the tastes of those whose sense of effect is more or less acute.

The back squab is projected from the length of the quarter as defined by the dotted line, A B. This is done that the full effect of the design may be seen and its lines grasped. Therefore, the full elevation in Fig. 1 gives the practical inside view of the car's trimming, from which a workman could go ahead without further supervision if he were served with such a draft in the workshop from which to finish a similar job from front to back.

Fig. 2 shows an end section of the back squab with the necessary conical springs and hair stiffened to cover.

Fig. 3 shows an end section of the hind cushion and the principle upon which motor car cushions are now universally made. Frames with these springs can now be had made to any dimensions required, and are supplied by firms holding patent rights for the improvement. The covering and stuffing is of course done by the trimmer. The frame and springs only are supplied by the patentees.

Fig. 4 shows the back and front seats in half plan and the cushions in their places. The front of the cushions are roll thickened as a rest for the thighs of the legs, thus distributing the weight of the body of the occupant correctly at its bearings when seated. These provisions in seating comfort are most highly praised by motorists who make touring a pleasure, as well as a necessity. Some arrangement for resting the feet at an angle to take the strain off the ankle would also find favor if it were adopted—that is, for the feet to be bracketed up from the level floor, like a driving boot in a horse-drawn carriage. A slight ridge about 2 in. deep would be all that a rider required.



Upholstering a Side-Door Motor Car.
Described on this page.

The different names and qualities of material used in the upholstering of motor cars is as follows: Pegamoid, rexine, levant, Morroco, rubber cloth, colored hides and waterproofing for covering canopy heads. This covering is made in various shades of color, and some are covered with enamel leather, while the wings are covered with patent leather, as in high-class horse-drawn carriages.

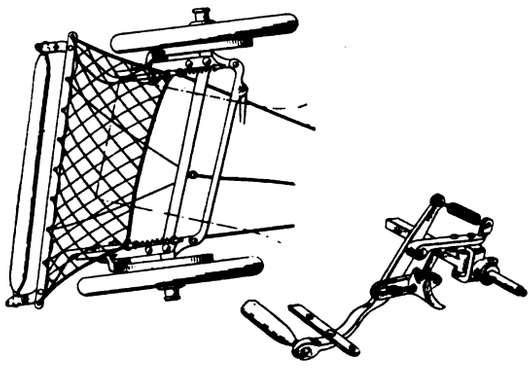
The Hornecker Motor Mfg. Co., has been incorporated, with a capital of $25,000, in Geneseo, Ill.

Digitized by Google

FENDER AND BRAKE ATTACHMENT FOR AUTOMOBILES.

This invention relates to fender and brake attachments for automobiles or motor cars and other like vehicles, and the patentee is John O'Leary, of Cohoes, N. Y., who has assigned one-half interest to Edward Penrose, of the same place. The patent number is 884,201.

The primary object of the same is to equip an automobile or motor car with a life guard means in the form of a fender so organized as to assume a position in consonance with the arcuate



movement of the front wheels of the automobile or car and be thus rendered especially effective as a means to obstruct the passage of the car over human beings when turning corners, the fender attachment automatically assuming an operative position low enough to take in the person or object struck and also manually operative or controllable by a driver or chauffeur.

Combined with the fender embodying the features of this improvement are brake shoes which may be brought into play or effective contact with the front wheels at a time subsequent to the engagement of the fender with a person or object in the road, but such brake shoes do not immediately engage the front wheels when the fender meets an obstruction to avoid throwing the obstruction that may fall into the fender outwardly from the latter by bringing the automobile or car to a too sudden stop. The brake shoes are therefore made operative by independent means or by devices under control of the driver and are so connected as to be operated independently of the fender and used at any time similarly to ordinary braking attachments.

The fender and brake shoes are applied to the inner portions of the front wheels so as to leave the outer portions of said wheels free of any confining devices. The fender is also automatically raised to normal position after it has been struck and liberated by removing therefrom the object that may be caught up thereby. The automatic elevation of the fender is accomplished through the medium of spring devices which are of such tension that when the fender is lowered or depressed by contact with an object the brake shoes will not be forced into contact with the portions of the wheels with which they co-operate, but are in such close proximity to the braking portions of the wheels that they may be quickly applied with advantage in stopping the machine after the fender has performed its function.

ANOTHER HIGH-WHEEL AUTOMOBILE PLANT.

An automobile factory recently began operations at Lincoln, Ill. This factory, which from various causes, principally lack of funds, failed in the early part of the year, has been reorganized by men of financial means and recognized business ability and success in other lines, and commenced on the 16th of last month to build cars.

The machine is of the high-wheel solid-tire class. Work began with twelve men in the shop, which cost to build alone, without machinery, $3,000. They expect to turn out twenty machines a month.

The population of Lincoln is 10,000 to 12,000, and there are three large coal mines and plenty of water. Lincoln is situated thirty miles from Peoria, Springfield, Bloomington and Decatur, and has three lines of steam railroads, and also the Illinois Traction System, an electric line from Peoria to Springfield and St. Louis, having connection with Bloomington and with prospects for electric connection with Chicago this year.

STATUS OF FRENCH AUTOMOBILE TRADE.

According to official returns the year of 1907 in the French automobile trade was very prosperous, the value of exports exceeding that of the imports by $26,606,322. The exports for last year compared with 1906 show a jump from $26,835,048 to $28,296,556, being an increase of just over $1,461,508. This is less than the increase from 1905 to 1906, which amounted to $2,433,250, the falling off being due to the check which the French motor-car industry has received through the rapid growth of the automobile industry in other countries. Great Britain still continues to take the greater amount of the French manufactures, the exports to the United Kingdom representing 40 per cent. of the total, or, to give the exact figures, $11,759,800. The imports into France of British cars amounted to $89,932.

Wants

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, five cents a word. Initials and figures count as words. Minimum price, thirty cents for each advertisement.

SITUATIONS WANTED.

Wanted—Foreman trimmer, at present employed, would consider proposition from reliable carriage or auto concern. Can furnish the best of references. Address "B. L. W.," care The Hub, 24 Murray St., New York City.

Wanted—Situation as blacksmith foreman in large factory. Has had fifteen years' experience as foreman in large factories and has all the latest methods of getting out the work. Can come well recommended. Address "Smith Foreman," care The Hub, 24 Murray St., New York City.

Wanted—Position by a thoroughly practical buggy manufacturer as superintendent or manager. Large factory preferred. Address "Hedger," care The Hub, 24 Murray St., New York.

Wanted—A position as body finisher in first-class shop. Am all-around body painter. Can furnish the best of references. Eleven years in one place. Address "W. K. M.," care The Hub, 24 Murray St., New York City.

Wanted—Position by an experienced foreman blacksmith, on medium or good grade work. Organizer; honest, reliable. Wishes permanent position with a good manufacturer. References A1. Address Box 180, care The Hub, 24 Murray St., New York City.

HELP WANTED.

Wanted—Salesman in vehicle and implement trade to handle side line of buggy tops, etc. Liberal commission paid. Write at once to Bauer Bros. Mfg. Co., Cincinnati, Ohio.

MISCELLANEOUS.

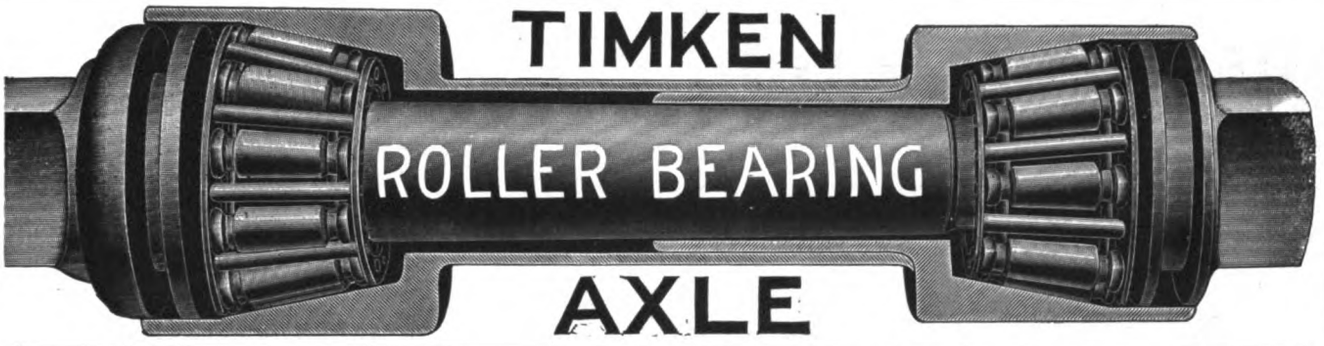
Wanted—Agents to sell Tire Bolting Machines to carriage manufacturers and repair shops. Territory, northern New York, western Pennsylvania, Illinois, Ohio and Indiana. Address Hemsley Adjustable Top and Tire Bolting Machine Co., Trenton, N. J.

Wanted—We are in the market at all times for fuel hardwood in lengths of 24 in., 30 in., and 36 in. Must be dry. Address Alwart Bros. Coal Co., 165 Webster Ave., Chicago, Ill.

PATENTS.

Patents—H. W. T. Jenner, patent attorney and mechanical expert, 607 F Street, Washington, D. C. Established 1883. I make an examination free of charge and report if a patent can be had, and exactly how much it will cost. Send for circular.

Digitized by Google



THE EVIDENCE

showing an increased earning power of $400.00 a year on a two horse truck by being equipped with

TIMKEN ROLLER BEARING AXLES

CLEVELAND, OHIO, February 10, 1908.

Gentlemen:—Replying to your recent request through your Mr. Staley as to our experience with your bearings, we take pleasure in saying that they have entirely surpassed our expectations, doing even more than you said they would.

Our records show that horses drawing wagons equipped with your bearings cannot only make more trips per day, handle more tonnage, thereby increasing our earnings, but keep in better condition than those drawing wagons with ordinary axles.

During 1907 a two-horse truck equipped with Timken Roller Bearings made 1,565 trips, traveled 6,260 miles, and carried 15,650,000 pounds.

In 1906 the same wagon, with ordinary axles, made 1,252 trips, traveled 5,008 miles, and carried 10,016,000 pounds.

And thus the earnings of this one team increased over $400.00 during the year 1907. During this period the bearings have been greased twice, and all this accomplished without one cent of expenditure for repairs.

From the above you can draw your own conclusion why we are replacing all of our old axles with anti-friction bearings.

Yours truly,
GENERAL CARTAGE & STORAGE CO.,
A. H. Greeley, Gen. Mgr.

What does this tell you? Would it not pay you to have your customers enjoy such profits? If you want more facts, write us.

The Timken Roller Bearing Axle Co.

CANTON, OHIO

BRANCHES:

10 East 31st Street, New York **429 Wabash Avenue, Chicago**

Digitized by Google

NEW YORK CITY

THE HERMITAGE

A CLUB HOTEL FOR MEN

The name tells the story.

Seventh Ave. and Forty-second St.

Junction of Broadway.



Restaurant on the street floor —a restaurant where ladies are welcome.

Every other part of the house exclusively for **men.**

Telephones in every room.

Respectful, quiet, obedient and alert Japanese servants.

Bedroom and bath **$2.00** a day upward.

Send for Booklet.

T. F. PADDELL, Proprietor

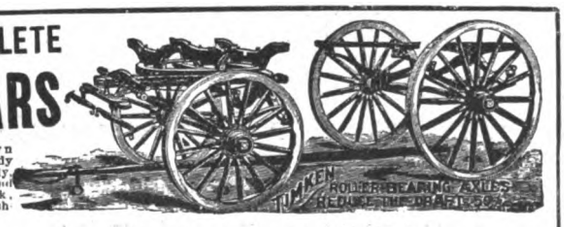
IF YOU WANT TO

KEEP POSTED

READ **THE HUB**

COMPLETE

GEARS



As shown herewith, ready to receive body for light and heavy work, can be furnished promptly

Trussed Platform Wagon Gear Complete, Ready for Body.

In ordering, give full specifications, or such descriptions as will enable us to make up specifications.

Also Combination and Three-Spring Gears in several styles.

1,000 Styles and Sizes "SELLE GEARS." WRITE FOR Catalog No. 16



THE AKRON-SELLE GEAR CO., Akron, O., U. S. A.

INDEX TO ADVERTISERS.

Akron-Selle Gear Co. 14
American Roller Bearing Fifth Wheel Co. 18
Armleder Co., O., The 22
Auxiliary Spring and Ventilating Button Co. 3

Barnes & Co., W. F. & John 18
Beckwith & Chandler Co. 2
Bimel-Ashcroft Mfg. Co. ..... 3d cover
Bradley & Son, C. C. 23

Central Bureau of Engraving 16
Columbus Bolt Works ..... 4th cover
Consolidated Rubber Tire Co. 2
Cortland Forging Co. 24
Crane & MacMahon ..... 2d cover
Crandal, Stone & Co. 5

Dalzell Axle Co. 21
Defiance Machine Works 17
Devoe, F. W., & Raynolds Co., C. T. ..... 3d cover

Eagle White Lead Co. 6
Eccles Co., Richard 19
English & Mersick Co., The 18
Enterprise Brass and Plating Co. 20

Fitch Gear Co. 22
Flexible Shaft and Tool Co. 6

Gerhab, Jacob 22
Gifford & Son, John A. 23
Goodrich Co., B. F., The 3
Goodyear Tire and Rubber Co. 4

Hankinson, J. V. 18
Harland & Son, Wm. 1
Hoopes Bro. & Darlington, Inc. ..... 2d cover

Jones & Co., Phineas 15
Jeffery & Co., Thomas B. 14

Kalamazoo Tire Setter Co. 19
Keystone Forging Co. 21
Kokomo Rubber Co. ..... 4th cover

Landsman Motor Co. 16
Landers Bros. Co. 15

Masury & Son, John W. 2
Maxwell & Fitch Co. ..... —
McKinnon Dash Co. ..... 4th cover
Miller Bros. 23

National Safety Fifth Wheel Co. 15
National Spring and Wire Co. 24

Ohio Seat Co. 23

Palm, Fechteler & Co. 1
Peerless Buggy Top Co. 24
Pomeroy & Fischer ..... —
Porter, H. K. 23

Rochester Wheel Co. 22
Russell, Burdsall & Ward Bolt and Nut Co. 22

Schacht Mfg. Co. 18
Sheldon Axle Co. 21
Smith & Co., Edw. 4
Sparks-Withington Co. 21
Spring Perch Co. 21
Standard Ball Axle Co. 15
Standard Oil Cloth Co. 5
Standard Leather Co. 24
Stein Double Cushion Tire Co. 5
Studebaker Bros. Mfg. Co. 6

Timken Roller Bearing Axle Co. 13

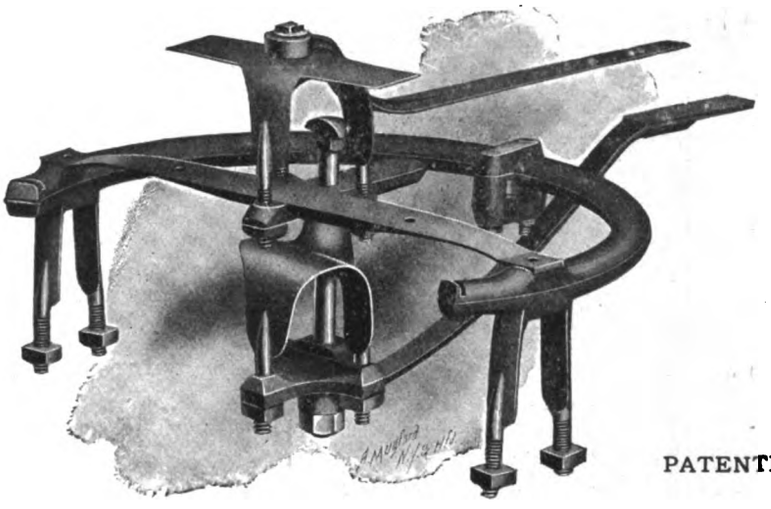
Valentine & Company 4

West Tire Setter Co. 6
Wiese & Co., Wm. 23
White, H. F. 2
Wilcox Mfg. Co., D. 15
Willey Co., C. A. ..... 2d cover
Woodman, Joel H. 15

Zwick & Greenwald Co., The ..... 3d cover

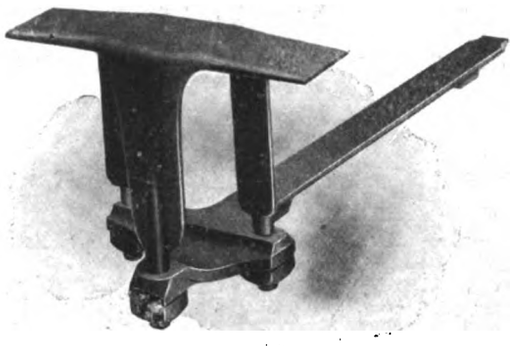
Please mention "The Hub" when you write.

Digitized by Google



No. 1902. Single Reach.

PATENTED.



No. 35½ and 41¾. Perch Heel.

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MFG. CO.

MECHANICSBURG, PA.

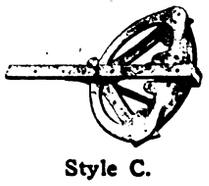
IT DOES THE TRICK R. F. D. SPECIAL



This axle runs easier than any other, and requires no attention. IT'S A WONDER Ask why. We can prove it.

STANDARD BALL AXLE WORKS, Lancaster, Pa.

National Safety Short-Turning Fifth Wheels
Are Giving Universal Satisfaction.
Ask Your Dealer for Them.
National Safety Fifth Wheel Co., Lancaster, Pa.

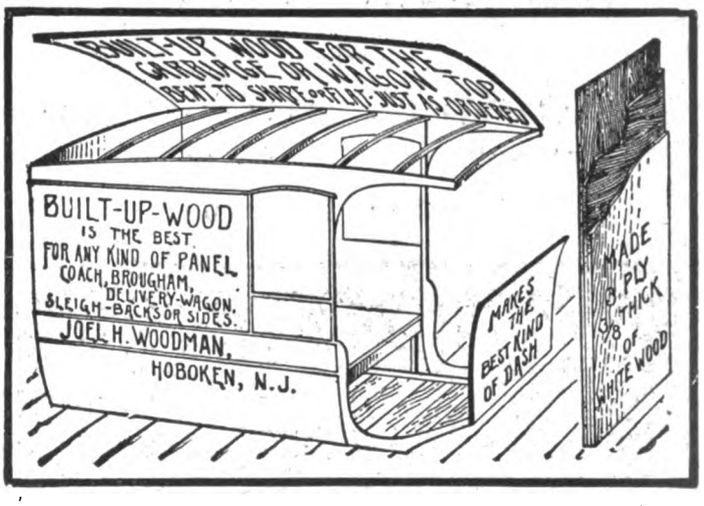


Style C.

Jones Wheels
BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.



LOWEST PRICES. *PROMPT SHIPMENTS.* *SUPERIOR QUALITY.*

TOLEDO **LANDERS BROTHERS CO.** **BOSTON**

We Are the Pioneers in the

SHEETINGS 32 Grades Single Double Three-Ply **BUCKRAM** Four-Ply and Canvas Lined **DUCKS**

WEBBING LINE **WADDING**

Celluloid Sheets, Enameled Muslins, Drills and Ducks

SCRIM. *RATTAN MOULDING.* *BATTS.* *OILED DUCK.* *OIL CARPET.*

Please mention "The Hub" when you write.

Digitized by Google

HOTEL CUMBERLAND

NEW YORK

Southwest Cor. Broadway at Fifty-fourth St.

Near 50th St. Subway and 53d St. Elevated Stations and accessible to all surface lines.



Headquarters for Carriage and Automobile Trade

Ideal Location, Near Theatres, Shops and Central Park.

NEW AND FIREPROOF

STRICTLY FIRST-CLASS IN EVERY RESPECT

All Outside Rooms. No Carpets. All Hardwood Floors and Oriental Rugs.

European Plan.

Transient Rates, **$2.50** with Bath, and up.

Restaurant Unexcelled. Prices Reasonable.

SEND FOR BOOKLET.

HARRY P. STIMSON, *Formerly with Hotel Imperial.*

R. J. BINGHAM, *Formerly with Hotel Woodward.*

Build Your Own Auto

A GASOLINE ENGINE TO FIT ANY BUGGY or WAGON

LANDSMAN MOTOR CO.

908 Hickory St. ST. LOUIS, MO.

Write for Catalogue.

MANUFACTURERS

DESIRING FIRST-CLASS ILLUSTRATIONS OF THEIR PRODUCT, AT REASONABLE PRICES, SHOULD PERMIT US TO SUBMIT AN ESTIMATE.

Central Bureau of Engraving

COMMERCIAL ENGRAVERS

157-159 WILLIAM STREET, NEW YORK

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

AXLES, ETC.
- Dalzell Axle Co., South Egremont, Mass.
- Sheldon Axle Co., Wilkes-Barre, Pa.
- Standard Ball Bearing Axle Co., Lancaster, Pa.
- Sparks-Withington Co., The, Jackson, Mich.
- Timken Roller Bearing Axle Co., Canton, Ohio.

BODIES, SEATS, ETC.
- Woodman, Joel H., Hoboken, N. J.

BODIES IN THE WHITE.
- Miller Bros., Amesbury, Mass.
- Schubert Bros. Gear Co., Oneida, N. Y.
- Schubert Gear Co., August, Oneida, N. Y.

BOLTS AND NUTS.
- Columbus Bolt Works, Columbus, O.
- Russell, Burdsall & Ward Bolt and nut Co., Port Chester, N. Y.

CARRIAGE CLOTHS.
- Wiese & Co., Wm., New York City.

CARRIAGE FORGINGS.
- Cortland Forging Co., Cortland, N. Y.
- Eccles Co., Richard, Auburn, N. Y.
- Keystone Forging Co., Northumberland, Pa.

CARRIAGE HARDWARE.
- Gifford & Son, John A., New York.

CARRIAGE GOODS.
- Crandal, Stone & Co., Binghamton, N. Y.
- English & Mersick Co., New Haven, Conn.
- Enterprise Brass and Plating Co., Cincinnati, Ohio.
- Gifford & Son, John A., New York.
- Wiese & Co., Wm., New York.

DASHES, FENDERS, RAILS, ETC.
- McKinnon Dash Co., Buffalo, N. Y.

ENGRAVING.
- Central Bureau of Engraving, New York City.

FIFTH WHEELS.
- American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
- National Safety Fifth Wheel Co., Lancaster, Pa.
- Wilcox Mfg. Co., D., Mechanicsburg, Pa.

FINISHED VEHICLES.
- Armleder Co., O., Cincinnati, O.
- Schacht Mfg. Co., The, Cincinnati.
- Studebaker Bros. Mfg. Co., South Bend, Ind.

JACKS.
- Hankinson, J. V., Franklin, Ohio.

LAMPS.
- Gifford & Son, John A., New York.
- Stevens & Sackett Co., New Haven, Conn.

LEATHER, PATENT AND ENAMELED (Artificial Included).
- Standard Leather Co., Allegheny, Pa.

MACHINERY AND TOOLS.
- Barnes Co., W. F. & John, Rockford, Ill.
- Defiance Machine Works, Defiance, Ohio.
- Kalamazoo Tire Setter Co., Kalamazoo, Mich.
- Maxwell & Fitch Co., The, Rome, N. Y.
- Porter, H. K., Everett, Mass.
- West Tire Setter Co., Rochester, N. Y.

MISCELLANEOUS.
- Landers Bros. Co., Toledo, Ohio, and Boston, Mass.
- Standard Oil Cloth Co., New York.

MOTORS, AUTO PARTS, ETC.
- "High Wheel" Auto Parts Co., Muncie, Ind.

ORNAMENTS.
- Palm, Fechteler & Co., New York.

RUBBER TIRES.
- Consolidated Rubber Tire Co., New York City.
- Goodrich Co., B. F., Akron, Ohio.
- Goodyear Tire and Rubber Co., Akron, Ohio.
- Kokomo Rubber Co., Kokomo, Ind.
- Stein Double Cushion Tire Co., Akron, Ohio.

SHAFT COUPLINGS AND ANTI-RATTLERS.
- Bradley & Son, C. C., Syracuse,
- Eccles Co., Richard, Auburn, N. Y.

SPOKES.
- Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.

SPRINGS AND GEARS.
- Akron-Selle Gear Co., Akron, Ohio.
- Auxiliary Spring and Ventilating Button Co., Detroit, Mich.
- Fitch Gear Co., Rome, N. Y.
- National Spring and Wire Co., Albion, Mich.
- Schubert Gear Co., August, Oneida, N. Y.
- Schubert Bros. Gear Co., Oneida, N. Y.
- Spring Perch Co., Bridgeport, Conn.

TOPS.
- Peerless Buggy Top Co., Cincinnati, Ohio.

TRIMMING MATERIALS.
- Stevens & Sackett Co., New Haven, Conn.

VARNISHES, PAINTS AND JAPANS.
- Beckwith-Chandler Co., Newark, N. J.
- Devoe, F. W., and C. T. Raynolds Co., New York City.
- Harland & Son, Wm., London and New York.
- Masury & Son, John W., New York and Chicago.
- Nobles & Hoare, London, England.
- Pierce Co., F. O., New York City.
- Pomeroy & Fischer, New York City.
- Smith & Co., Edw., New York City.
- Valentine & Company, New York, Chicago, Boston, Paris.
- Willey Co., C. A. Hunter's Point, New York City.

WHITE LEAD.
- Eagle White Lead Co., Cincinnati, Ohio.

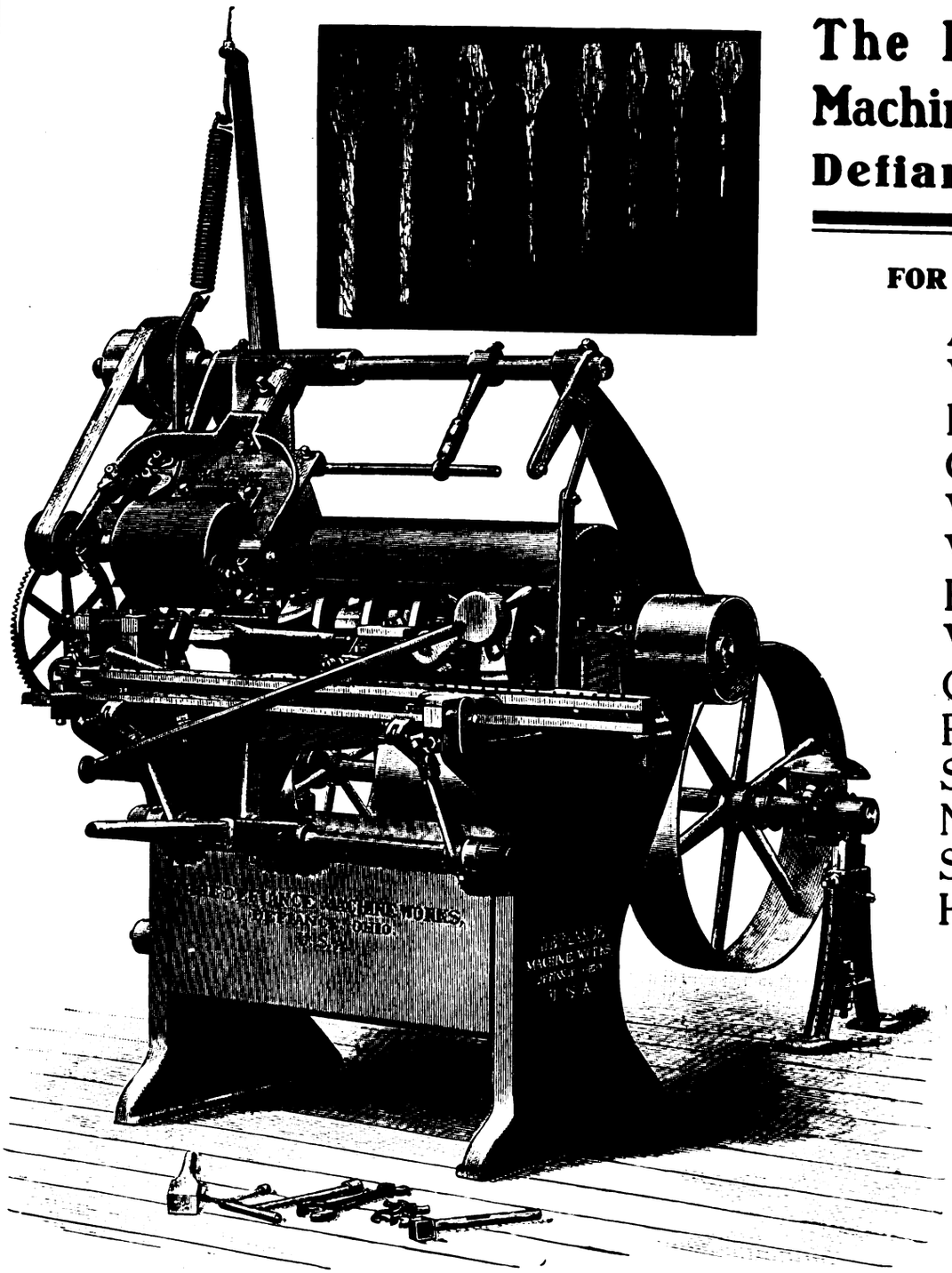
WHEELS.
- Crane & MacMahon, New York.
- Gifford & Son, John A., New York.
- Hoopes Bro. & Darlington, West Chester, Pa.
- Jones & Co., Phineas, Newark, N. J.
- Rochester Wheel Co., Brockport, N. Y.
- Zwick & Greenwald Wheel Co., Dayton, Ohio.

WHEEL STOCK, BENT WOOD, ETC.
- Crane & MacMahon, New York.

Digitized by Google

"DEFIANCE"
WOOD-WORKING MACHINERY

INVENTED AND BUILT BY



The Defiance Machine Works
Defiance, Ohio

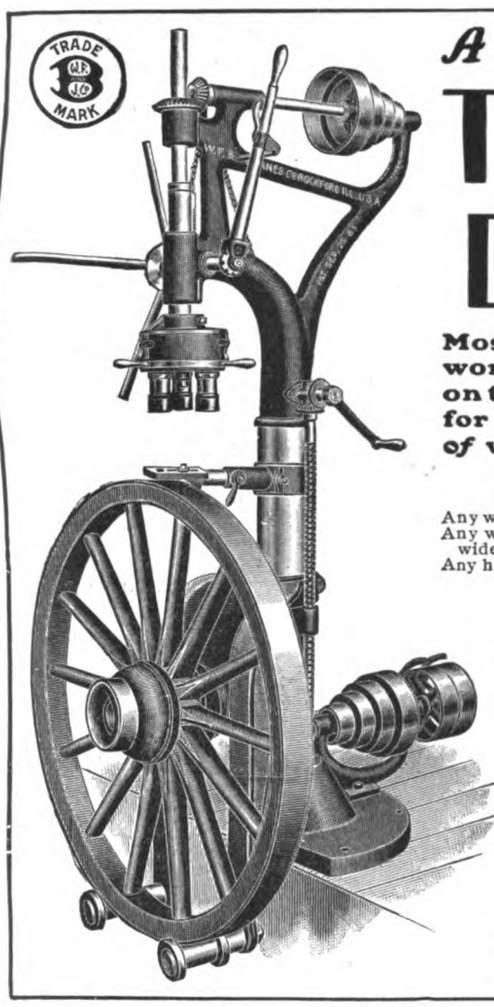
FOR MAKING

Automobile Wheels and Bodies,
Carriage and Wagon Wheels,
Hubs, Spokes,
Wagons,
Carriages,
Rims,
Shafts Poles,
Neck-Yokes,
Single Trees,
Hoops,
Handles,
Spools,
Bobbins,
Insulator Pins
and
Oval Wood Dishes

24-inch Patent Automobile Spoke Turning Lathe

Please mention "The Hub" when you write.

Digitized by Google



A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam'
Any width of tire up to 6 in' wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.

The Invincible Schacht

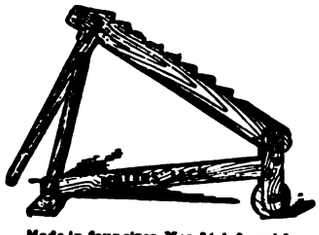
A WONDER IN A HUNDRED WAYS



MODEL K.

The simplest, most practical, efficient and economical car ever built. Twelve h.p., Friction Drive. Any speed up to thirty miles per hour. All parts interchangeable and thoroughly "getatable." Large wheels with cushion tires overcome all tire troubles. Almost noiseless and rides like a pneumatic. The greatest selling proposition on the market. Live agents wanted everywhere. Prompt deliveries and thorough satisfaction guaranteed. Send at once for catalogue, etc., and be convinced.

The SCHACHT MFG. CO., Cincinnati, O.



Made in four sizes, Nos. ¾, 1, 2, and 3.

JACKS FOR BUGGIES AND WAGONS

Miller Patent Wagon Jack Made by

J. V. HANKINSON,

Successor to THOS. MILLER,

FRANKLIN, OHIO.

Write for particulars and prices.

Robe Rails

We have worked up some new ideas in Robe Rails. Make them stronger and reduce the cost—without any sacrifice in good looks.

We make them in polished brass in many styles—any width—mostly ⅝ inch and ¾ inch stock.

We also have rails that fold down out of the way when not in use.

We can cover rails with leather to match the trimming of the car for those who desire this extra touch of luxury.

We would be pleased to execute any work after your own designs.

Have you our new 340 page catalogue?

The English & Mersick Co.

123 Winchester Avenue
New Haven, - - Conn.

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.

745 THIRD AVE., BROOKLYN, N. Y.

Digitized by Google

ECCLES BALL-BEARING COUPLINGS

The cut shows our coupling bolted to axle, and the form our flat leather bushing takes when the shafts are placed and locked in the coupling. The leather can be securely fastened in by the user, by driving a soft wire nail through the small hole we drill, which clinches it.

When the shafts are removed, the bushing does not come out, but stays in the Coupling where it belongs. NO LOST BUSHINGS WHEN YOU USE OUR COUPLINGS.

We would like to send you our circular and have you try our Couplings. They will save you money.



Patented June 11, 1907.

Patented Nov. 25, 1902.

The spring is pivoted at the front so that it can be turned forward out of the way of the wrench while clipping the Coupling to the axle.

These are two of the good points, but there are plenty more desirable features in our Couplings.

We also have a Catalogue showing our full line of CARRIAGE and WAGON FORGINGS, all of which we make

RICHARD ECCLES COMPANY, AUBURN, N. Y.

THE KALAMAZOO TIRE SETTER

Made for hand or power. Cut shows power machine.

Weighs 1275 Lbs.

Will set all tires from light buggy tires up to wagon tires 3 x3-4.

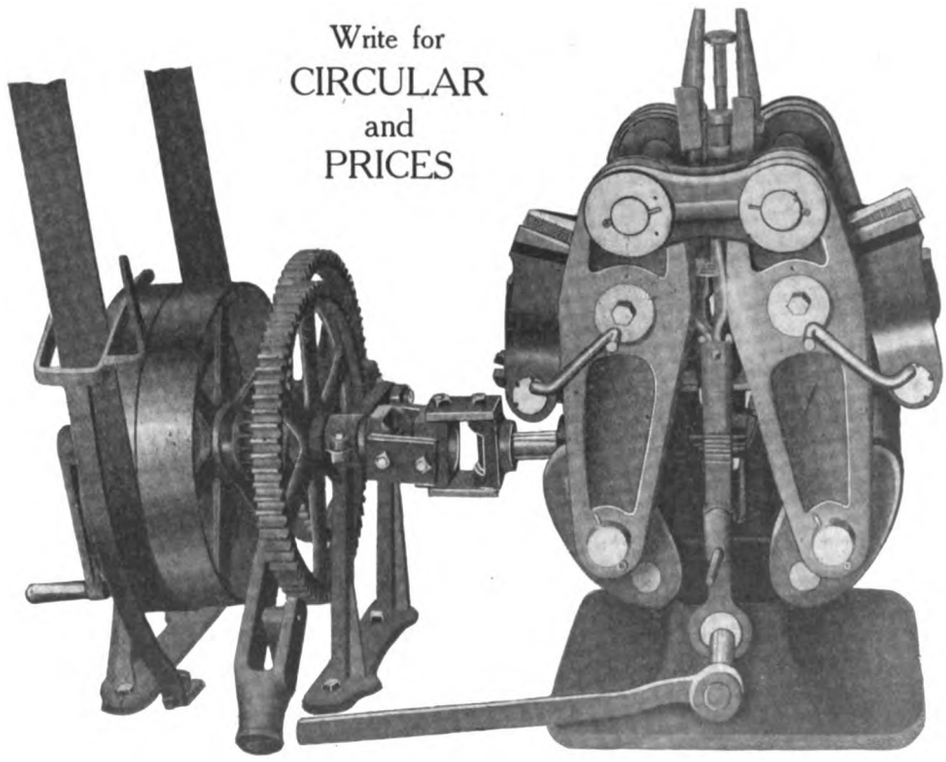
Will set

20 Tires Per Hour

Almost indestructible.

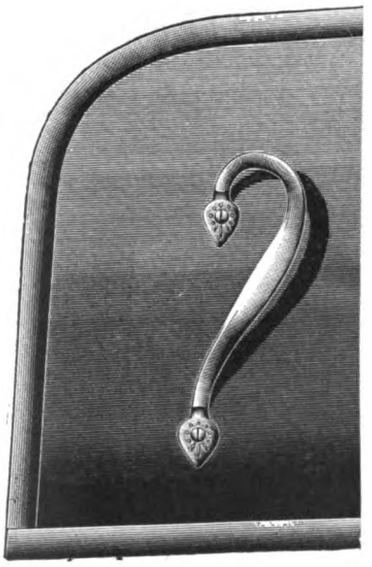
Will not break or wear out.

Write for CIRCULAR and PRICES



KALAMAZOO TIRE SETTER CO., Kalamazoo, Mich.

Digitized by Google



. . OUR . .

AUTO HANDLES

Will save you from 35 to 50 per cent.

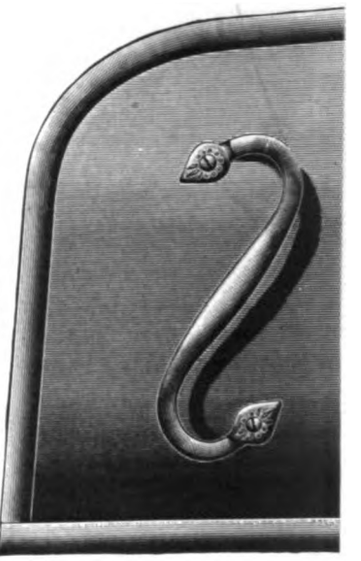
ENTERPRISE

Brass & Plating Co.

CINCINNATI, OHIO.

Write for Samples and Prices





C.H.A.T.

Helps Secure Situations.

Carriage, Harness and Accessory Traveling Salesmen's Association

OF THE UNITED STATES.

All Commercial Travelers in Above Lines Eligible. No Others. Pays Death Benefits.

Membership Fee, - - - $3.00
Annual Dues, - - - - 1.00

Employers of Traveling Men eligible to join as associate members on payment of $5.00, and are exempt from all further dues.

Manufacturers of carriages, harness or goods that enter into their construction, jobbers of same, can secure good, reliable and efficient salesmen through our Association, as the members of this Association have the best facilities for knowing all about men who are seeking situations, and none will be recommended unless they are first class and worthy of support.

Salesmen in need of a situation, or manufacturers in need of a salesman, address for further information,

L. H. KRONFELD, Secretary.

Box 57, Mount Vernon, N. Y.

Carriage Mechanics

Desiring to improve their present Condition should attend the

TECHNICAL SCHOOL

FOR

Carriage Draftsmen and Mechanics

SUPPORTED BY THE

Carriage Builders' National Ass'n.

The object of the School is to teach men to design vehicles and make working drawings, and to otherwise facilitate their work in the shop. Only those men employed in carriage or automobile building or their accessory trades are admitted to its privileges.

The classes are conducted in three divisions, viz.: Corresponding, Day, and Evening. The former is open during the entire year, while the day and evening classes are in session only from October 1st to April 1st.

The tuition is moderate.

For prospectus and full particulars, write to the instructor,

ANDREW F. JOHNSON,
18 West Forty-fourth St.,
NEW YORK CITY.

The Australasian Coachbuilder and Wheelwright.

A Monthly Illustrated Technical Journal circulating among Coachbuilders and Wheelwrights of the Australian Commonwealth, New Zealand and South Africa.

The Medium for advertising to Coachbuilders and Wheelwrights in these parts.



Advertising rates and other information furnished on application.

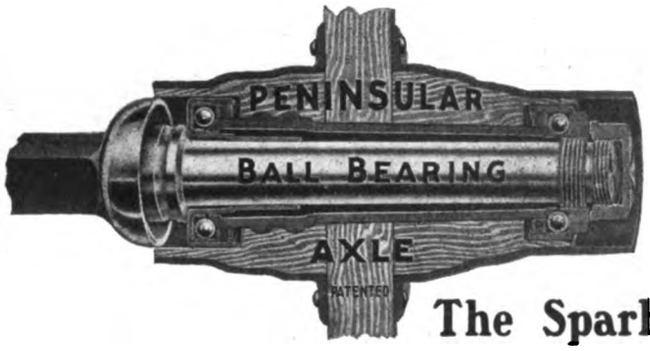
Annual subscription $3.60 in advance, post prepaid to any part of the world.

J. E. BISHOP & CO.,

6 Market Street . . . . . SYDNEY, N. S. W., AUSTRALIA.

Digitized by Google

SOMETHING ENTIRELY NEW



BY USING OUR

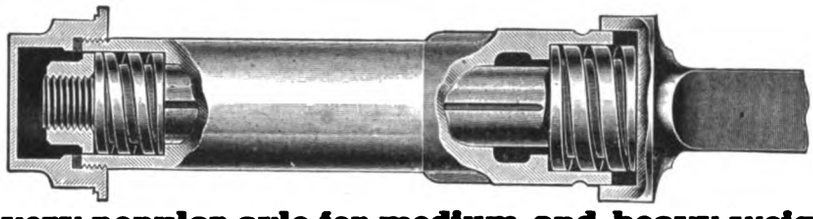
PENINSULAR Ball-Bearing Attachments

you can change any common axle into a ball-bearing job in ten minutes' time. **It is no longer necessary to carry ball-bearings in stock.** After the buggy is completed as a regular common axle job you can in ten minutes change it to a ball-bearing job.

LET US TELL YOU ABOUT IT.

The Sparks-Withington Co., Jackson, Mich.

PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

DALZELL AXLE CO., South Egremont, Mass.

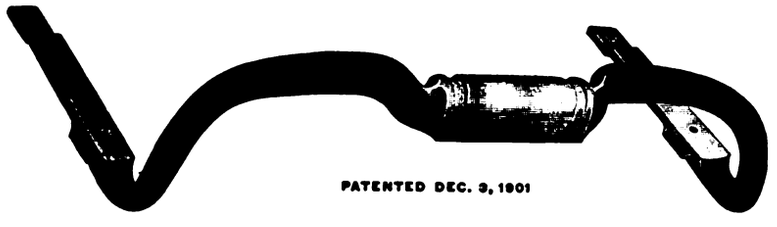
Axles

A complete line of Wagon and Carriage Axles—Common, Concord, Farm Wagon, Half Patent, Long Distance, Collinge and Mail Patent. Empire Ball Bearing Axles. Made only by

SHELDON AXLE COMPANY, Wilkes-Barre, Pa.

The Best and Easiest Riding Springs, for both Light and Heavy Vehicles. We have had very great success with our Automobile Springs : : : : : :

Springs



THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland Pa.

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

Digitized by Google



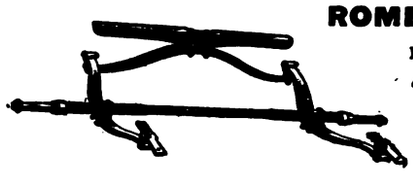
BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.

FITCH GEAR CO.

ROME, N. Y., U. S. A.



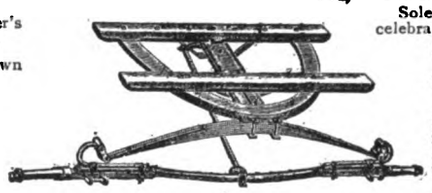
Manufacturers of over

40 STYLES of GEARS

From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.

Sole Manufacturers of the celebrated

Kramer Lowdown Short Turn Gear



Kramer's Patent Lowdown Gear.

It is the Finest Gear for Drop Centre-Body for Milk, Bakers' or Butchers' Wagons on the market.

Send for our No. 22 Catalogue, just out.

ROCHESTER WHEEL CO.

BROCKPORT, N. Y.

Manufacturers of

Sarven, Warner, Sweet, Compressed and Shell Band Wheels

In All Sizes Up To 2⅝ in. Spoke.

Plain or Channel Tire applied and boxes set if desired. The Largest and Best Equipped Factory in the State. Write for List and Discounts.

HOTEL WESTMINSTER

Irving Place and 16th Street

NEW YORK CITY.



One block from **Union Square,** Surface, Elevated and Subway Cars. Midway between leading **Wholesale** and **Retail Stores** and **Theatres,** and yet far enough from Broadway to insure **Comfort** and **Freedom** from the noise and bustle of that thoroughfare.

Perfectly Quiet Locality and **Home-like** in every respect.

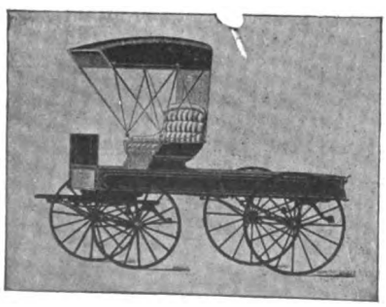
EXCELLENT CUISINE, EUROPEAN PLAN.

Single Rooms, $1.00 per day and up. Room with Bath, $2.00 per day and up. Parlor, Bedroom and Bath, $3.00 per day and up.

SEND FOR BOOKLET.

O. H. FOSTER, Proprietor.

To All Dealers



handling **ARMLEDER** Business Wagons there is a sense of EXTREME SATISFACTION that comes from selling an article of intrinsic and true merit.

Just sell ONE of our wagons and TEST IT FOR YOURSELF.

At any rate get our Form N Catalogue and Price List.

The O. Armleder Co. CINCINNATI OHIO

Headquarters for "The H. D. Smith & Co.'s" Carriage and Wagon Forgings

JACOB GERHAB

DEALER IN

Carriage Cloths, Leathers and Trimmings, Wagon and Cart Material

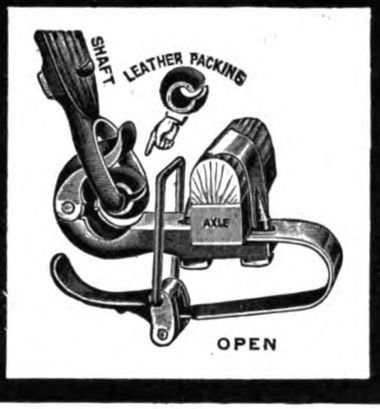
Salable prices and all information cheerfully furnished

158, 160, 162 and 164 North Third Street

PHILADELPHIA, PA.

Digitized by Google

THE BRADLEY SHAFT COUPLING



OPEN

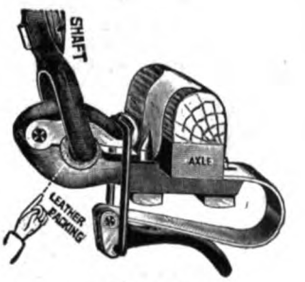
Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1½ in. in section.

C. C. BRADLEY & SON, Syracuse, N. Y.



CLOSED

JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

MILLER BROTHERS

Builders of

CARRIAGES

IN THE WHITE

AND

Automobile Bodies

AMESBURY, MASS.

THE OHIO SEAT CO.

Manufactures PANEL SEATS

STICK SEATS of every description.

Also Canopy Frames, Cushion Frames and Buggy High Backs. Up-to-date Equipment. Write for Quotations.

1964-1966 CENTRAL AVE., CINCINNATI, O.

PPPPPPPPPPPP
OOOOOOOOOOOO
RRR BOLT CLIPPERS RRR
TTT EVERETT, MASS., U.S.A. TTT
EEEEEEEEEEEE
RRRRRRRRRRRR

WM. WIESE
With Hardt, Von Bernuth & Co.
Since 1883.

WM. WIESE & CO.

ALBERT MAERTENS
With Hardt, Von Bernuth & Co.
Since 1894.

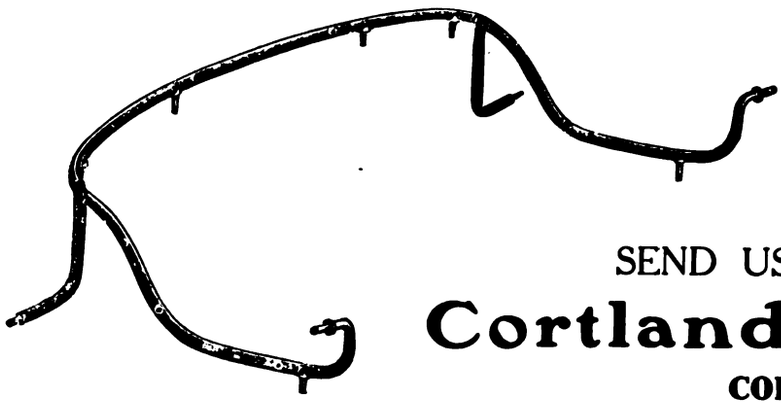
Formerly Carriage Goods Department of HARDT, VON BERNUTH & CO.

Carriage and Automobile Linings and Livery Cloths

Sole Agents in the United States for
WULFING'S CARRIAGE CLOTH AND EL DE BARAN GOATSKIN.

66-68 Greene St., New York

Digitized by Google



WE MAKE

Buggy Auto Seat Shifting Rails

OF ALL DESCRIPTIONS

SEND US YOUR PATTERNS.

Cortland Forging Co.

CORTLAND, N. Y.

Peerless Buggy Top Co.

MANUFACTURERS OF

AUTOMOBILE AND BUGGY TOPS

Backs, Cushions and Storm Aprons.

And all Kinds of CARRIAGE TRIMMINGS. **CINCINNATI, O 10.**

Our Carriage or Spring Edge Cushion Frame



Is not an Experiment, but has been tried and stands the test.
We would like to quote you prices.
NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

Journal for the Carriage and Automobile Trade

The Hub

Published Monthly at Two Dollars per Year

PATENT AND ENAMELED LEATHER

MANUFACTURED BY THE

STANDARD LEATHER COMPANY

Allegheny City, Penna.,

For Carriage, Furniture and Automobile Manufacturers

Is Second to None. Prices and Samples Submitted on Request.

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES } **C. T. RAYNOLDS & CO'S** { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES }

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

Bimel-Ashcroft Manufacturing Company

Main Office, POPLAR BLUFF, MO.

Factories:
POPLAR BLUFF, MO.
MOREHOUSE, MO.
DERMOTT, ARK.
LOUISVILLE, MISS.

Foreign Correspondence Solicited.

SPOKES

OUR GROWTH

1902—1,310,241 Spokes

1903—3,240,185 Spokes

1904—5,485,748 Spokes

1905—7,845,653 Spokes

1906—7,927,759 Spokes

1907—7,748,839 Spokes

Our New Plant Increases Our Capacity to 12,000,000 Spokes

The ZWICK & GREENWALD WHEEL CO.

Dayton, Ohio

MAKERS OF

HIGH GRADE VEHICLE WHEELS
SARVEN PATENT COMPRESSED BAND HUB
AND STEEL SHELL BAND WHEELS

WE MAKE A SPECIALTY OF TIRING WHEELS **WRITE FOR PRICES**

Digitized by Google



No. 101, Solid Foot, with Japanned Raised Rail.

McKINNON DASH COMPANY

Cincinnati, Ohio.
Troy, Ohio.

BUFFALO, N. Y.

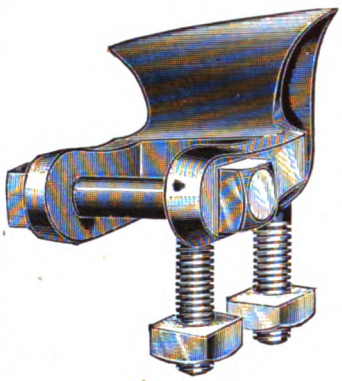
St. Catharines Ontario

OUR SOLID FOOT DASHES WITH FEET

FINELY JAPANNED

are the best for good work.

Japanned raised rails welded to frame make the dash complete.



Skewed Shaft Couplings

FOR

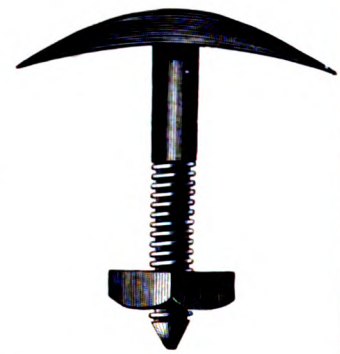
High Arched Axles

Furnished in Rights and Lefts for Any Height of Arch.

Bolts, Nuts, Washers, Carriage Hardware and Special Forgings

1908 Catalog "H" on application.

COLUMBUS BOLT WORKS, Columbus, O.



KOKOMO TIRES

SEEING, they say, is believing, but in Rubber Tires the surface appearance does not count. The story of "Kokomo" Tires has always been one of **feeling.** It presents the only true method of arriving at the real merits of a tire.

Pure Rubber is an important part of the "Kokomo" compound. You don't have to ask the man on the box if they give complete satisfaction—he tells you so.

"Kokomo" always for comfort and long service.

Kokomo Rubber Company

Kokomo, Indiana, U. S. A.

Digitized by Google



Digitized by Google

Vol. L., No. 3. JUNE, 1

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

C. A. WILLEY COMPANY

Color Grinders

AND MANUFACTURERS OF

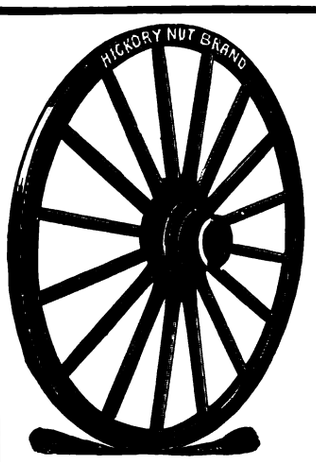
SPECIALTIES IN CARRIAGE and CAR PAINTS, COLORS, Etc.



92d St. Cars at Hunter's Point Ferry Pass our Factory.

Hunter's Point, New York City

CALL AND SEE US WHEN IN NEW YORK.



CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

Transfers for all Purposes

SCROLLS, FIGURES, FLOWERS, LETTERS, ANIMALS
STRIPINGS, NUMERALS, CORNERS

"GOOD-AD" WINDOW SIGNS PALM, FECHTELER & CO. BOSTON 67 FIFTH AVE NEW YORK MONTREAL CHICAGO

DECALCOMANIE

"GOOD-AD" WINDOW SIGNS PALM, FECHTELER & CO. BOSTON 67 FIFTH AVE NEW YORK MONTREAL CHICAGO

SPECIAL NAME PLATES OF ALL DESCRIPTIONS
BUGGY ORNAMENTS IN SETS

No shop is complete without our catalog. Send for one.

Palm, Fechteler & Co.

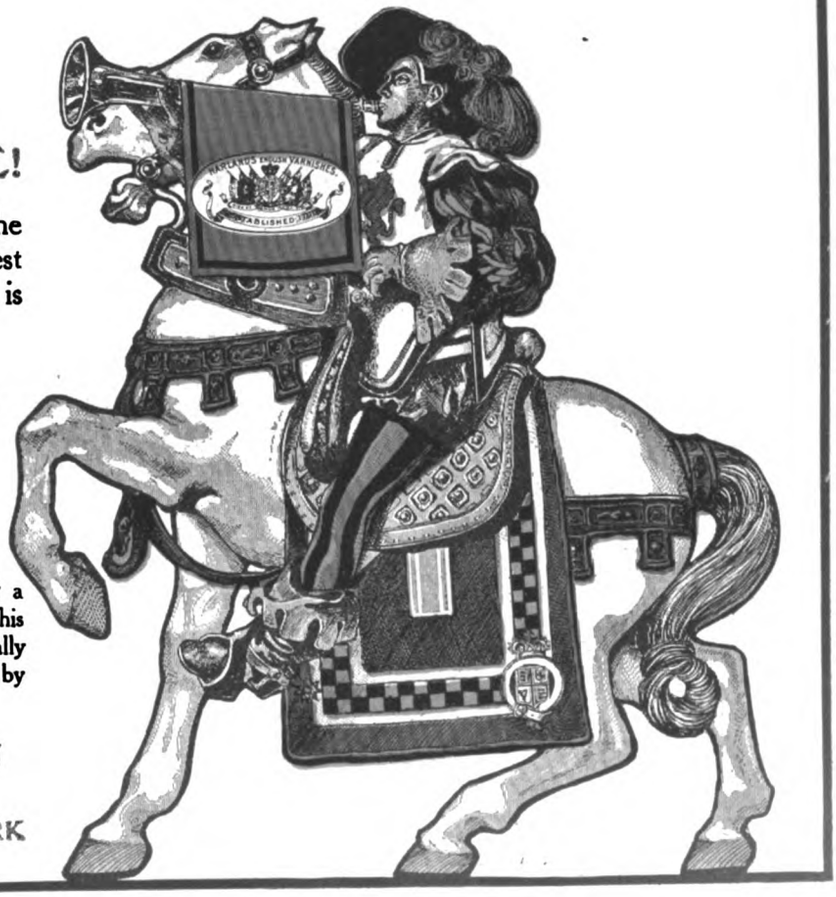
NEW YORK: 67 Fifth Ave. CHICAGO: 43-45 La Salle St. MONTREAL. E. LIVERPOOL, O.

HEAR YE!
HEAR YE!
HEAR YE!

All ye who labor in the Finishing Rooms of the Carriage and Automobile Industries! The best wearing and most beautiful and lasting finish is obtained by the use of

HARLAND'S ENGLISH VARNISH

The merits of Harland's Varnishes are backed by over a century of progress, and it is the unsurpassed quality of this varnish which has not only given the makers a universally pre-eminent position, but has also made it the standard by which all others are compared.



WM. HARLAND & SON
168 CENTER ST.
NEW YORK

Factories:
Merton, London S. W., England.

Digitized by Google

JOHN W. MASURY & SON

MANUFACTURERS OF

Superfine Coach Colors
:: :: and Varnishes :: ::

NEW YORK and CHICAGO

WHITE'S BRAZING SLEEVES

[redacted] MANUFACTURED BY [redacted]

H. F. WHITE, 111 E. Pearl St., Cincinnati, O.

"Mighty to Wear"

Beckwith-Chandler Company

Manufacturers of High-Grade

COACH AND RAILWAY VARNISHES

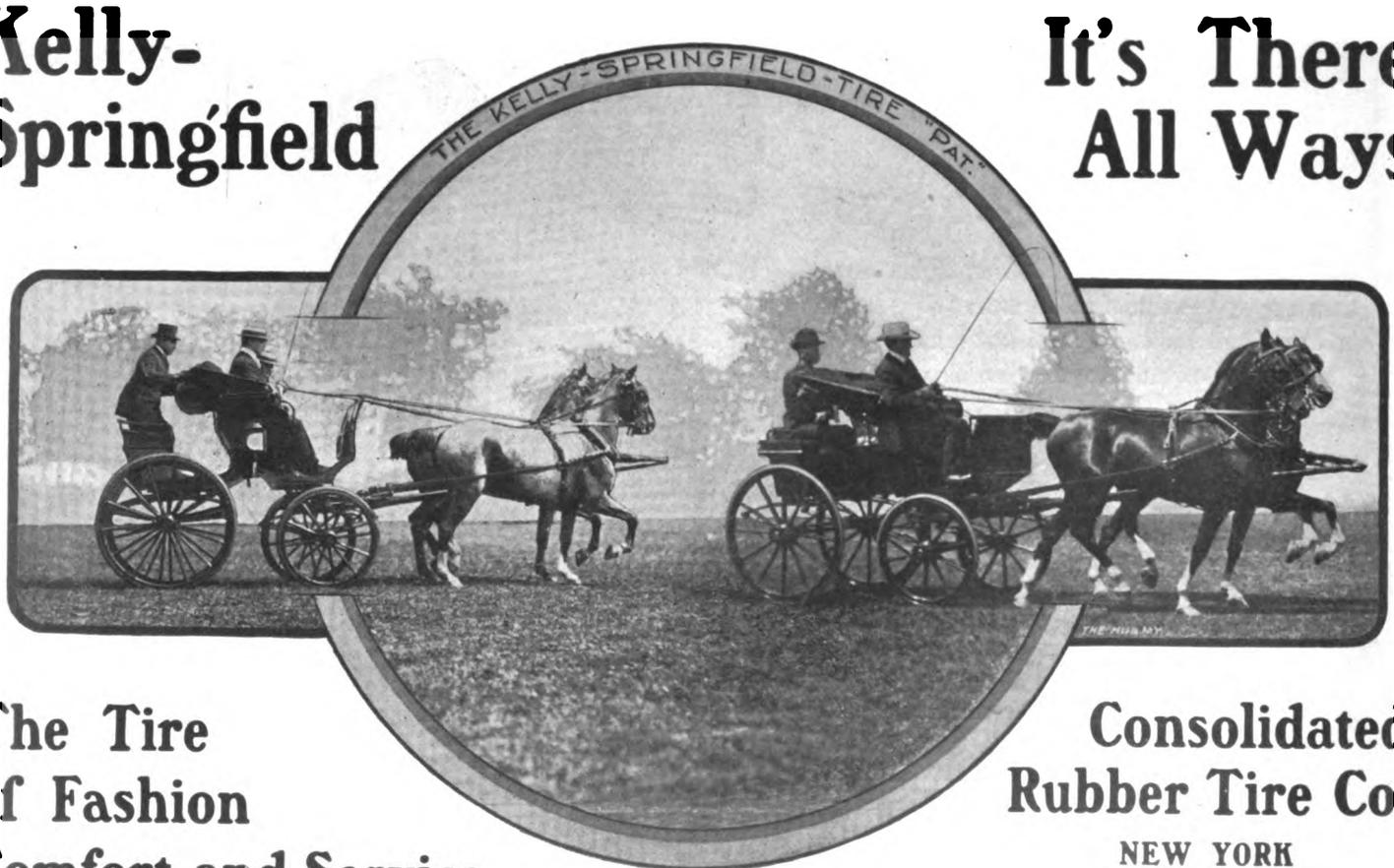
NEWARK, N. J. 201 EMMETT STREET

NEW YORK 320 FIFTH AVENUE

"Lasting Satisfaction"

Kelly-Springfield

It's There All Ways



The Tire of Fashion Comfort and Service

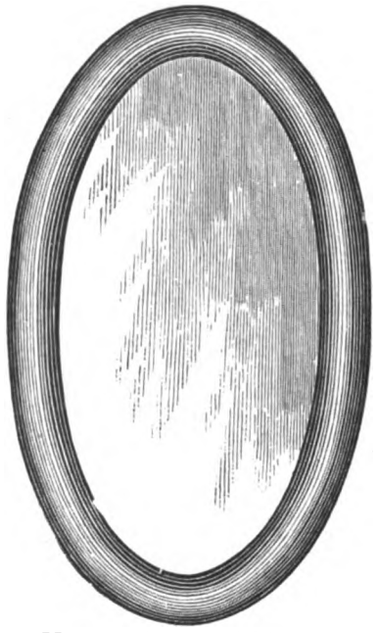
Consolidated Rubber Tire Co.

NEW YORK

Factories: AKRON, OHIO

Please mention "The Hub" when you write.

Digitized by Google



This little **Mirror Curtain Light,** our No. 5, is nobby in itself, and makes any kind of a buggy top look enough better to more than pay the cost of the Mirror.

Can be fastened to the backstay or head-lining and is attached the same as a regular curtain light.

Your order would have prompt attention if sent to the makers.

CRANDAL, STONE & CO.

BINGHAMTON, N. Y.

PERMANENCY

Sometimes when business is a little slow the dealer is tempted to handle goods that have nothing to commend them but cheapness.

Don't jeopardize your well-earned reputation by offering for sale vehicles that you know aren't up to **Studebaker** quality.

One-time sales do not build up a business; it's re-sales that put the dealer on a solid footing and make his business permanent.

The dealer who sells **Studebaker** vehicles is building up a permanent trade—a trade that will stick. There is nothing that holds trade like quality—**Studebaker** quality.

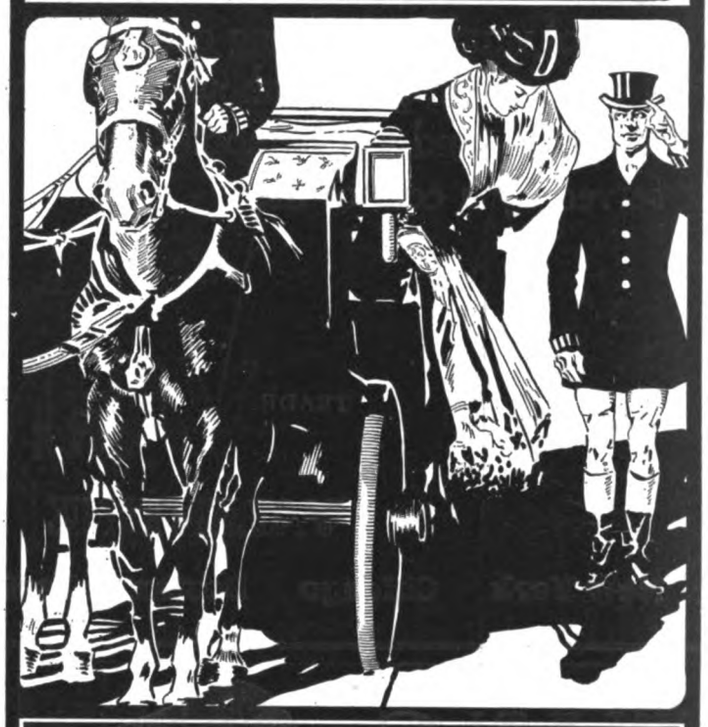
"Trade that stays is trade that pays"

Studebaker

Bros. Mfg. Co., South Bend, Ind.

Largest Vehicle Manufacturers in the World

STEIN DOUBLE CUSHION TIRE





Patented 1892-1902.

DOUBLE CUSHION

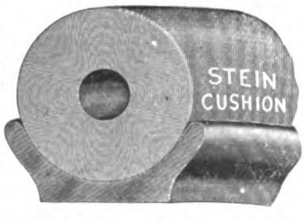
is no mere name or fancy, but an established and recognized fact in connection with the

STEIN DOUBLE CUSHION TIRE

Seeing, they say, is believing, but to appreciate the double cushion reality existent in our tires—ride over them. What was previously an idea then becomes an establshed fact.

The Stein Double Cushion Tire will be a big talking point in your 1908 line. Be wise and get next to our proposition.

The most serviceable rubber tire on earth.



STEIN DOUBLE CUSHION TIRE CO.

Akron Ohio

THE HUB CURLEY

Digitized by Google

LAWSON
WEARING BODY

¶ Work that is turned out in large numbers, and that demands a finishing coat of varnish possessing exceptional Durable Luster, yet so very pale that it covers with gloss without hiding the brilliancy of the underlying pigment ----color----and can be applied so as to dry dust free over night, is perfectly served by a coat of the

Lawson Wearing Body Varnish

TRADE VALENTINES VARNISH MARK

VALENTINE & COMPANY

New York Chicago Boston Paris Amsterdam Toronto Montreal

WING
RUBBER CARRIAGE
TIRES



are made from tough, durable, lively New Rubber. QUALITY is the first consideration. Our "Wing" Tire will outwear several ordinary rubber tires. The wings (see cut) keep water, sand and grit from working between the channel and the tire, to wear out the tire from underneath. Write for particulars.

GOODYEAR AKRON, OHIO TRADE MARK.

The Goodyear Tire & Rubber Co.
Carriage Tire Dept.
Akron, Ohio

BRANCHES: Boston, New York, Buffalo, Chicago, Cincinnati, Detroit, St. Louis, Denver, Los Angeles, San Francisco.

81 Years' Experience in Every Can

E.S. 1827 &CO.

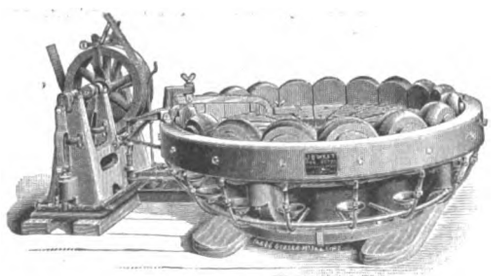
Edward Smith & Co.

Varnish Makers and Color Grinders

New York
45 BROADWAY

Chicago
3532 SOUTH MORGAN ST.

THE FIRST TIRE SETTER



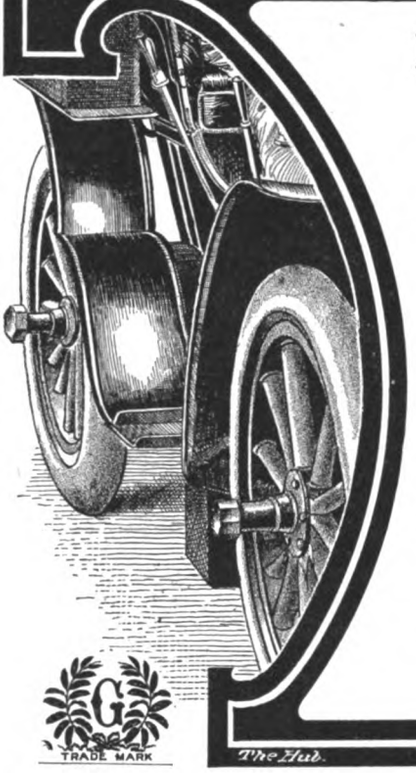
you ever heard of was a **"WEST"**—probably, for they were on the market several years before any other and you are hearing more about them every year. Many of the older users are loudest in their praise. That's because they stand the test of time—they're made that way. Some of our Hydraulic machines have been **in use fourteen years** and are doing as good work now as when first installed. **Now,** we don't claim our machines are best simply because they have been longest on the market, **but because** we have been making a study of cold tire setting all these years and improving our machines as experience and observation taught us, and when you buy a **"West Hydraulic"** you get the benefit of this experience. Some people knowing **our** machines would set tires cold satisfactorily, thought some other would do as well—and the price was cheap—also machine. Now they wish they had bought a **"West Hydraulic." If you make a similar mistake it's your own fault.**

Buy a **"West Hydraulic"** and be happy. Hand or Power machines.

THE WEST TIRE SETTER COMPANY, Rochester, N. Y.

Digitized by Google

GOODRICH TIRES



How to Get Along to the Best Advantage

USE **GOODRICH TIRES**

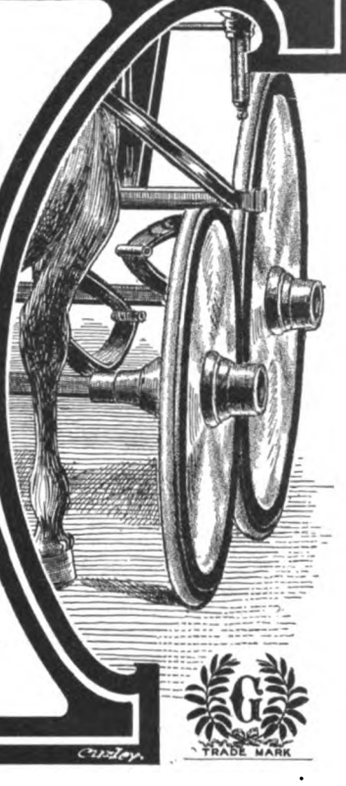
Goodrich Solids for the horse-drawn pleasure vehicle.

Goodrich Pneumatics for the motor car.

THE B. F. GOODRICH COMPANY
AKron, Ohio

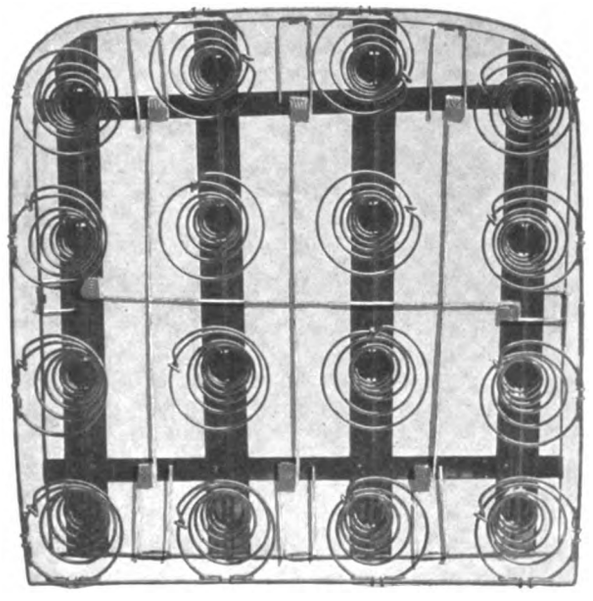
Philadelphia, 1332 Arch St. *Chicago,* 24 E. Lake St.
Detroit, 266 Jefferson Ave. *Boston,* 161 Columbus Ave.
St. Louis, 3926-28 Olive St. *Cleveland,* 2188 Ninth St. S. E.
Denver, 1536 Glenarm St. *San Francisco,* 50-60 Fremont St
Seattle, 310 First Ave. S. *Los Angeles,* 818 S. Broadway.
London, 7 Snow Hill, E. C.

Our products are also handled in
New York, 66-68 Reade St. *Buffalo,* 731 Main St.
by The B. F. Goodrich Company of New York.
No. 2 Rue Brunel, Avenue de La Grande Armee, Paris, France.



TRADE MARK TRADE MARK

ROYAL ARCH AUXILIARY SPRINGS



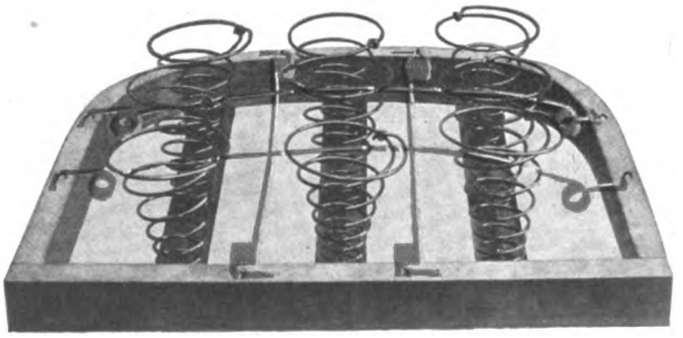
Soft Face Construction. Patented.

Auxiliary Spring & Ventilating Button Co.
DETROIT, MICH.

ROYAL ARCH AUXILIARY SPRINGS prevent the complete depression of the coiled springs, relieve the coils of the severe shocks, and greatly lengthen the life of the cushion. A cushion with Royal Arch Springs will never sag, and

FORTIFIES THE RIDER AGAINST THAT SUDDEN UNEXPECTED JAR

Will cost no more than the common construction. Why? Write us.



Wood Frame Construction. Patented.

Digitized by Google

HIGH CLASS ENGLISH VARNISHES

Nobles & Hoare

Cornwall Road, Stamford Street

LONDON

TRADE MARK

Sole Agents in United States **POMEROY & FISCHER** New York

28 and 30 Frankfort St. (P. O. Box 1224)

INDEPENDENT OF ALL COMBINATIONS

The Eagle White Lead Company's

"EAGLE" BRAND OF "OLD DUTCH PROCESS" WHITE LEAD

ALSO "EAGLE" RED LEAD, LITHARGE AND ORANGE MINERAL

Our **Special Coach and Carriage White Lead** is the best white lead on the market for this class of work.

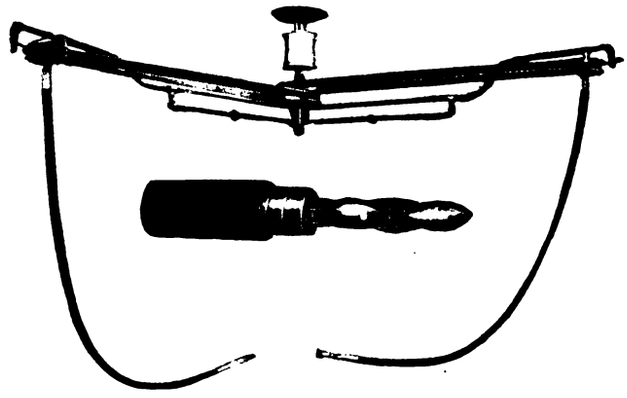
We claim for our **"Eagle" Red Lead** that, for Durability, Color, Texture, Covering and Spreading Properties, it is not excelled by any red lead in the world. It requires more pure linseed oil to the hundred pounds, and when properly mixed it will not settle. It is the best foundation coating for vehicles known.

New York—54 Maiden Lane
H. C. Russell, *Manager*
Philadelphia—1901 Callowhill St.
Baltimore—447 North St.
Geo. O. Shivers, *Manager*
Buffalo—Builders' Exchange
A. S. Goltz, *Manager*
Pittsburg—
Pittsburg Paint Supply Co., *Agts.*
Cleveland—
The Hale & Holmes Co., *Agents*
Chicago—125-127 N. Peoria St.
E. B. Bennett, *Manager*
St. Louis—405a Benoist Bldg.
B. P. Temmeyer, *Manager*
Kansas City—
W. R. McDonald, *Agent*
New Orleans—
Jno. R. Todd & Bro., *Agents*
Dallas—Jack H. Frost,
Agent for State of Texas

Eagle White Lead Co., Cincinnati, Ohio

There Are Others

BUT NONE SO GOOD



THIS IS THE

RADIAL BORING MACHINE

THAT GIVES SATISFACTION.

SPECIAL PATENTED PLUG BIT AND OTHER ATTACHMENTS IF DESIRED.

STEEL LINK CORE, STRONG AND DURABLE

PRICES:

Double Arm Machine, with Chuck.....$85.00
Single Arm Machine, with Chuck..... 65.00
A Discount of 15 per cent. when cash accompanies order

The Flexible Shaft & Tool Co.

BELLEFONTAINE, OHIO.

Please mention "The Hub" when you write.

Digitized by Google

The Hub

Copyright, 1908, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. L. NEW YORK, JUNE, 1908. No. 3.

THE TRADE NEWS PUBLISHING CO. OF N. Y.

Publishers of THE HUB

J. H. Wright, *President.* G. A. Tanner, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

Jacob H. Klein, *Technical Editor.*

REPRESENTATIVES:

J. Henry Klune. J. G. Tanner. B. H. Hull.

The Hub is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of Trade News Publishing Co.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

France.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

Germany.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

England.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

The Wagon Builders.

The National Association of Wagon Manufacturers is forging its way to the front among national trade and manufacturing organizations under conditions and difficulties which very few interests have had to encounter. The industry was slow to get together. The carriage builders found strong incentives to organization thirty-five years ago. The wagon manufacturing interests were surrounded by different conditions, and which did not outwardly at least, call for mutual effort for self-protection. In carriage building, cost of manufacture gravitated to a common level much more quickly than the cost of wagon building. Location, contiguity to sources of lumber supply, meant a great deal more to the wagon builder than to the carriage builder.

It was the great advantages gained by fortunate location that made the large wagon builders practically independent of each other and which made organization for mutual protection less necessary. The earlier wagon builders built up their trade and were practically secure in its possession. But with the growth of plants, and their increase in number and increase in cheap transportation facilities, which stimulated competition, advantages became equalized gradually. Exceptional locations counted for less. Freight rates overcame supposed advantages. The more distant wagon builder discovered he could deliver wagons in common competing territory at about the same price per wagon as the manufacturer much closer to that market.

Within say five years, conditions have been transformed, very largely through increasing severity of competition. This competition was stimulated to a degree by the accessory manufacturers of wagon supplies whose progress simplified the business of the wagon builder. The underlying spirit of the great organization which has sprung into existence is two-fold: first, to modify competition by mutual confidence, and second, to systematize the production and marketing of supplies, along lines that will harmonize with necessity and experience.

The great organization has brought to it the brains and experience and energy of the industry. Practical purposes are sought to be accomplished. These purposes are forcing themselves on each individual firm at every turn.

The association is driving into its work as though no time is to be lost. The disposition to get every possible advantage out of organzation is almost universal. There are very few large builders who are not identified with the movement. The recent election of officers has brought to the fore men of experience and capacity who can be relied upon to forward the good work.

Strike Failures.

The voluntary action of carriage and wagon builders in regulating wages in harmony with employes and their own views of fairness explains the generally harmonious conditions in the vehicle industry. Not all employers are receiving as much and as valuable services for the wages paid out as they should. In numerous instances they are obliged to put up with inefficient labor and often at a critical moment the employe leaves for another position, attracted by the glamour of a trifling advance.

It is a question whether it is advisable for a workman to leave a good position for a trifling advance elsewhere, especially if he is assured of constant employment where he is. In accepting new positions a mechanic encounters many risks and possible emergencies which do not show on the surface. Many first-class carriage mechanics who a year or two ago were led or induced to leave their benches for better positions are to-day at work at less agreeable work and at poorer pay.

Changes are often made by mechanics from a pure desire to change. Mechanics often strike simply because they have become weary of constant and unbroken toil. Many of the strikes can be explained by this psychological point. The mind simpy becomes weary of constant repetition, of constant sameness. It is in reality the mind that strikes for an opportunity for relaxation, for a break in the endless monotony.

We smile at the workmen of the Latin nations with their frequently recurring "saints' days" of thirty or forty a year, when they lie idle to the disgust of American employers. But these ignorant workmen have, after all, more reason on their side than many of our American

Digitized by Google

workmen who greedily toil 312 days a year, or until rebellious human nature induces them to "strike."

Human nature needs more leisure and relaxation than it is getting or can get under the American system of machinery. Machinery is the master. It demands every instant's attention of eye, ear and fingers of the mechanic. We boast of it. We boast of wearing out our muscles and nerves. The truth will some day come out that most of our strikes are nothing more nor less than the defiant and just protests of our human nature against excessive toil.

But employers are not yet ready to admit any such possibility. Besides, under our driving system it is not possible to establish a "laying-off" system. Our mechanics would not agree to it. They are as hoggish as their employers. But all the same, American labor is defying the common instincts of human nature in unrelieved toil by the week, month and year.

Estimating Cost.

The handlers of carriage work have a very simple and effective method for making themselves safe, and that is by adding 25, 33 1-3 or 40 per cent. to factory cost of work. It is a mere matter of marking the tag. But not so with the carriage manufacturer or wagon builder. It is a complex and annoying problem to find out the actual cost of work. The best of figuring sometimes proves defective. And besides, so little carriage work turned out is based on cost calculations. Honest and sincere carriage builders have tried it and given up in disgust where they found other builders selling work without regard to theoretical cost.

It is a question whether a cost-estimating basis will ever be arrived at. The most popular and most satisfactory way is to take the ledgers at the end of the year and count up how much cash is over. A still easier way is to glance at the bank account.

Recently some very elaborate and painstaking systems have been worked out, which on their surface seem to cover the problem. But a close scrutiny of these systems reveals a defect, and that is, the time and labor and guesswork necessary to be expended to fill up the various neatly printed blanks. The overlapping of one department onto and into another makes it very difficult to tell when the cost in one department ends and where the cost begins in another.

The problem, serious as it is, deserves all the effort at solution which it is receiving, even though the cost of conducting a cost-estimating department does add something to the sum total of expenses.

Buggies.

So far as it has been possible to obtain reliable information as to the actual condition of the buggy industry, it appears that branch of the carriage industry has suffered less than any other branch. From comments made by a few of the larger buggy manufacturers who make a specialty of that branch, it would appear that the buggy manufacturing business has divided somewhat into two lines. Along one line there appears to be an attempt to turn out better and higher class work. Some manufacturers are calling special attention through their travelling agents to the finer quality of work done and to a finer finish. The margin on buggies is very low, and the only avenue left to make an impression upon buyers is along the line of quality. It is certainly apparent that some manufacturers are giving special attention to the building of what has always been termed high grade buggies, but within the past year or so marked improvements have been made in the high grade buggy class. Salesmen representing some of the larger manufacturers tell their employers of the greater ease in making sales of buggies representing the very highest type of skill and the highest possible finish. In other words, there is quite an increase in the number of those who are willing to pay five, ten or twenty dollars more for a buggy that represents that higher cost.

On the other hand, there is a noticeable departure among some buggy builders who are looking after trade in some of the newer sections of the country. Those who manufacture especially for this trade are turning out a grade of buggies suited to the pocketbooks and necessities of the people supplied. There are no more shyster buggies built, as was the case many years ago, but there is a departure in construction by which a fairly satisfactory buggy can be built at a lower price, and which suits a large class of traders who are building up business in large sections of the country, which have been recently brought under cultivation. The people in these new localities, the leading salesmen have recenty said, do not insist upon the highest grade, or longest endurance; they want something that will go and meet their purposes, and so it happens that quite a percentage of buggy output in certain factories is built to meet these particular requirements. This class of buggies might not meet with favor in the older markets, but they are worth every dollar asked for them, and they are selling at a price which puts them within the reach of the average small farmer and business man in the rising towns of the far off localities which our railroads are opening up.

Two Additional Forest Reserves.

Notwithstanding the baldness of the subject of hickory supply, there is scarcely an issue of trade journals connected with the industry using hickory but what has something additional, but not always new, to say on the subject. Government experts are pointing out the difficulties involved, but they encourage us to hope for some relief in the fact that there is considerable hickory left in the South, which it does not pay at present to cut. Much of this hickory is good for poles, shafts and rims, and we are told that through the rapid development of the South these scattered supplies of hickory will be brought within reach.

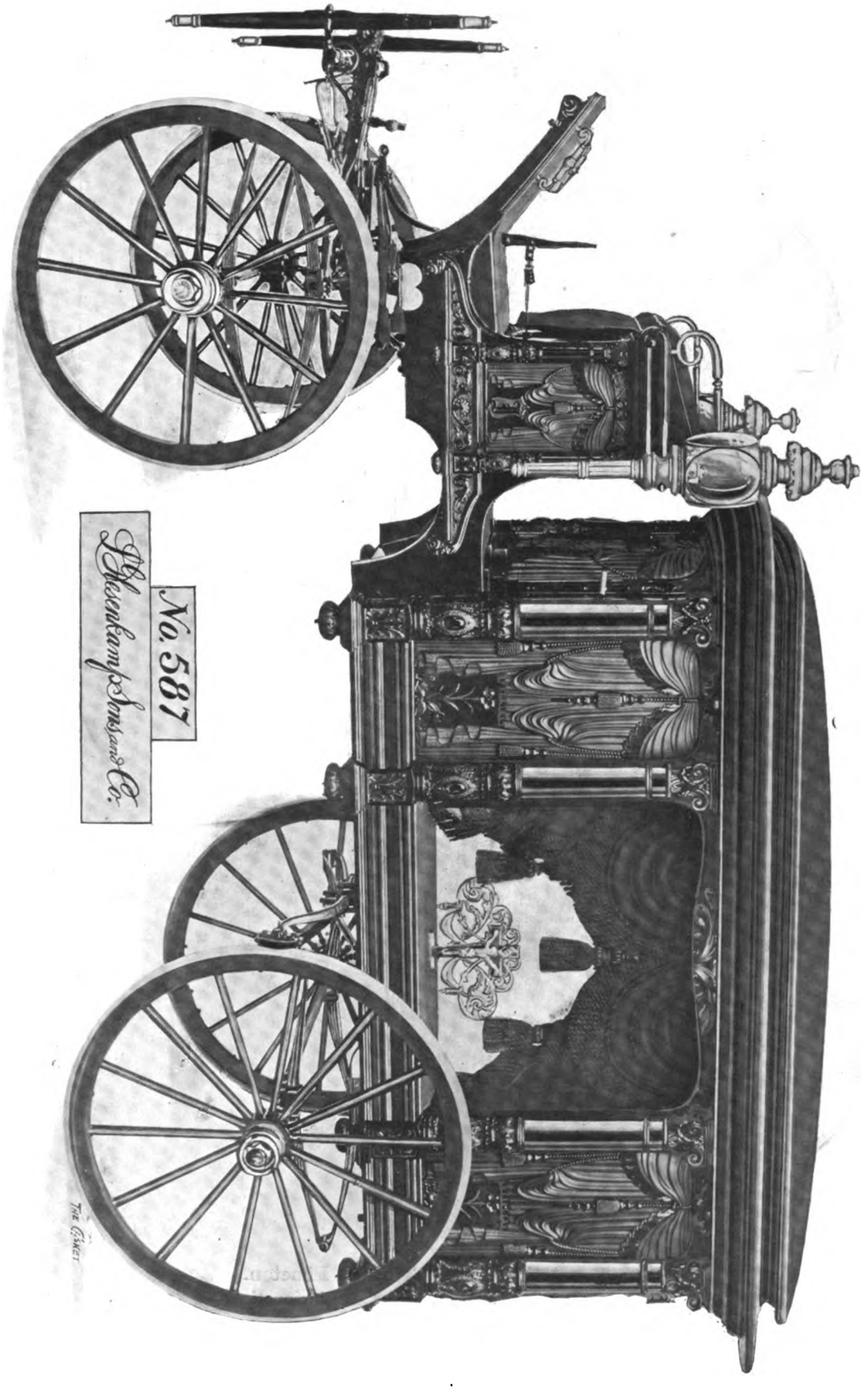
Two large areas, one of 5,600,000 acres in the Appalachian field, and 600,000 acres in northern New England, will be set apart where the supplies will be guarded from waste and tree culture encouraged. It is quite probable that by the economic management of these patches under government supervision some moderate relief will soon be realized. The relief cannot come too soon.

Postponed Enterprises.

During the past year quite a number of carriage and wagon-building enterprises were formulated, and many of them would probably have taken shape but for the discouraging condition which developed during the latter part of the year. These projected enterprises have been temporarily postponed, and wisely. They can remain in abeyance safely until present capacity is more fully employed. The cost of freight shipment is the only thing that can open up a desirable opportunity for the building of a carriage or wagon plant. The two things to be considered at present are the cost of freight from present factories and nearness to sources of supply. New factories in remote localities, which depend upon purchasing accessories, have a longer freight to pay, which will probably offset any advantage of nearness to timber supply.

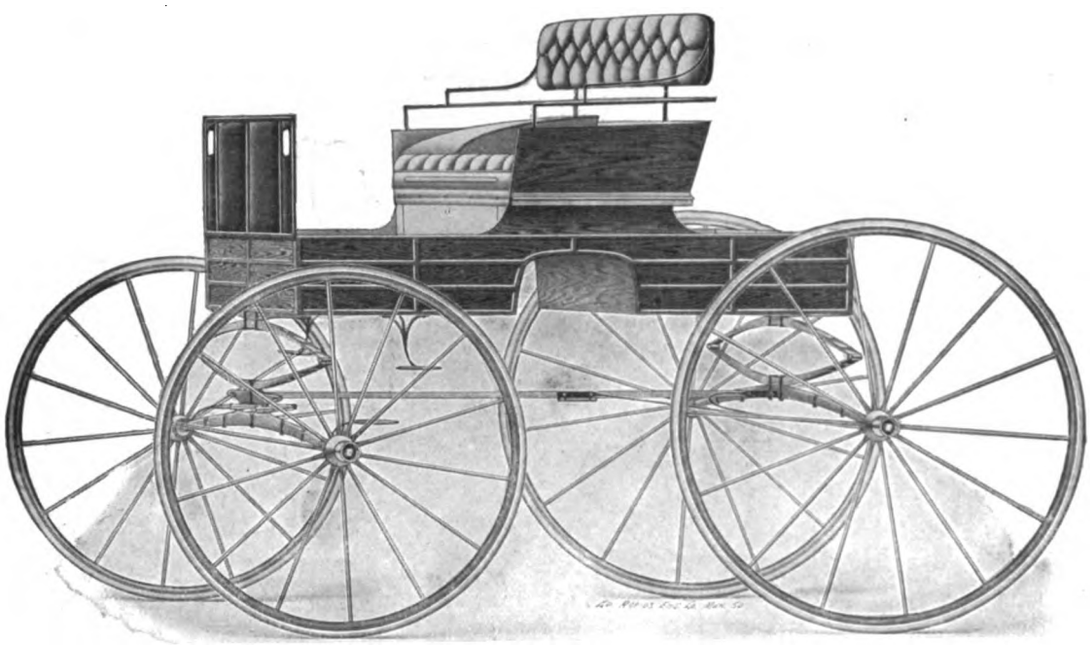
Digitized by Google

Illustrated Carriage Section, June, 1908.

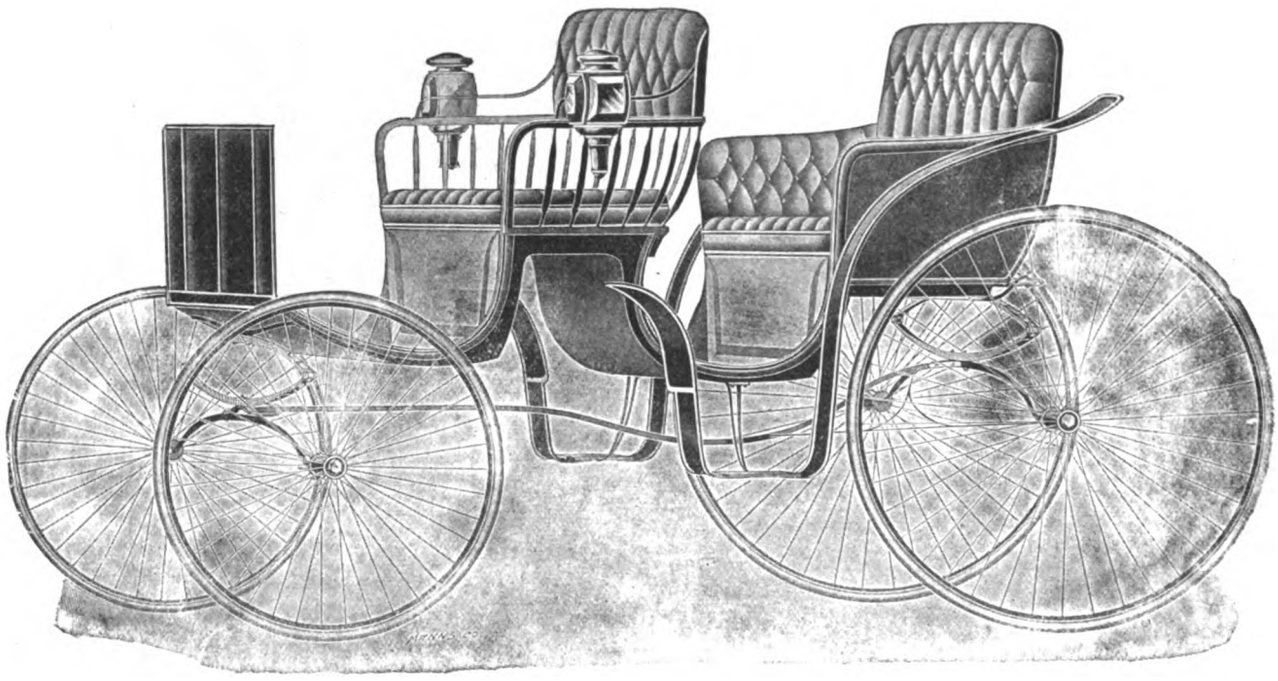


Elaborate Funeral Car with Brake and Ornamental Boot.
Built by L. Glesenkamp Sons & Co., Pittsburg, Pa.

Digitized by Google

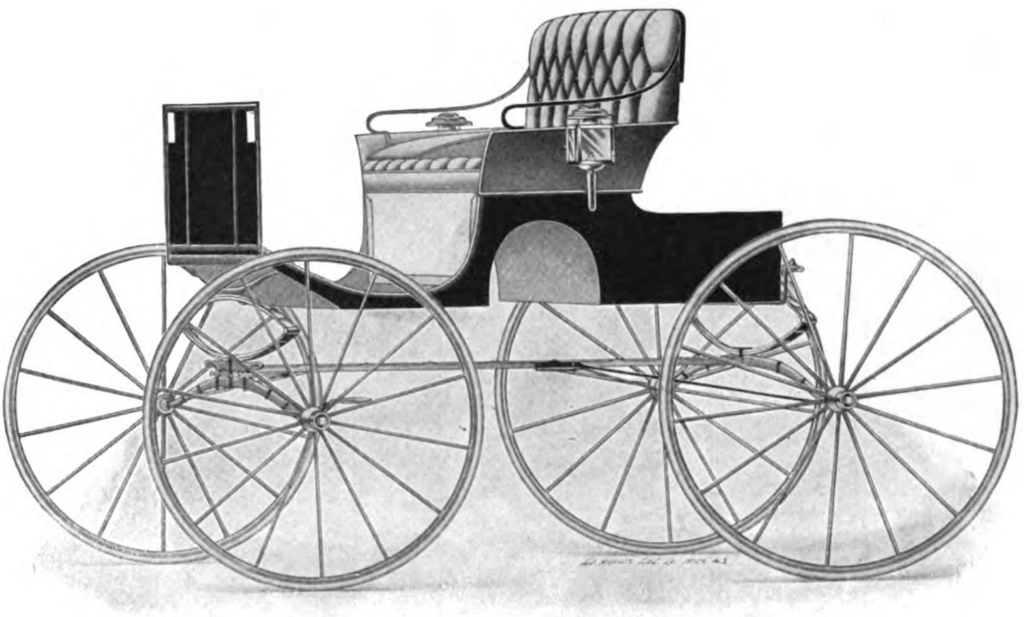


Natural Wood Driving Wagon.
Built by Sechler & Company, Cincinnati, Ohio.

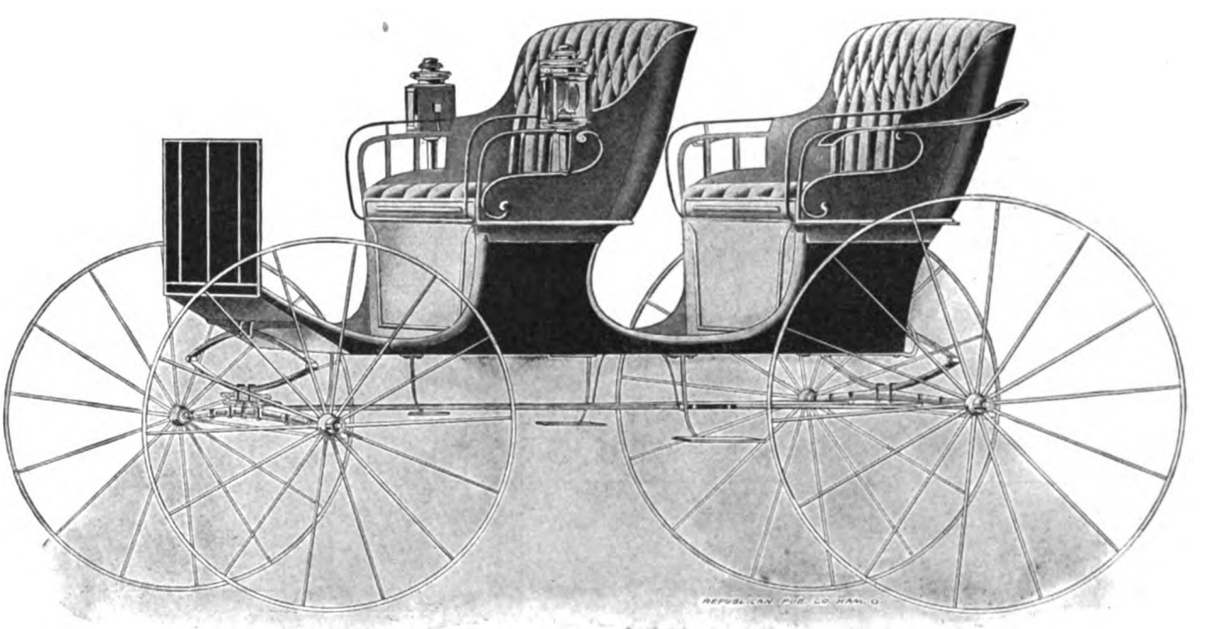


Wire Wheel Cabriolet Phaeton.
Built by the Schacht Mfg. Co., Cincinnati, Ohio.

Digitized by Google

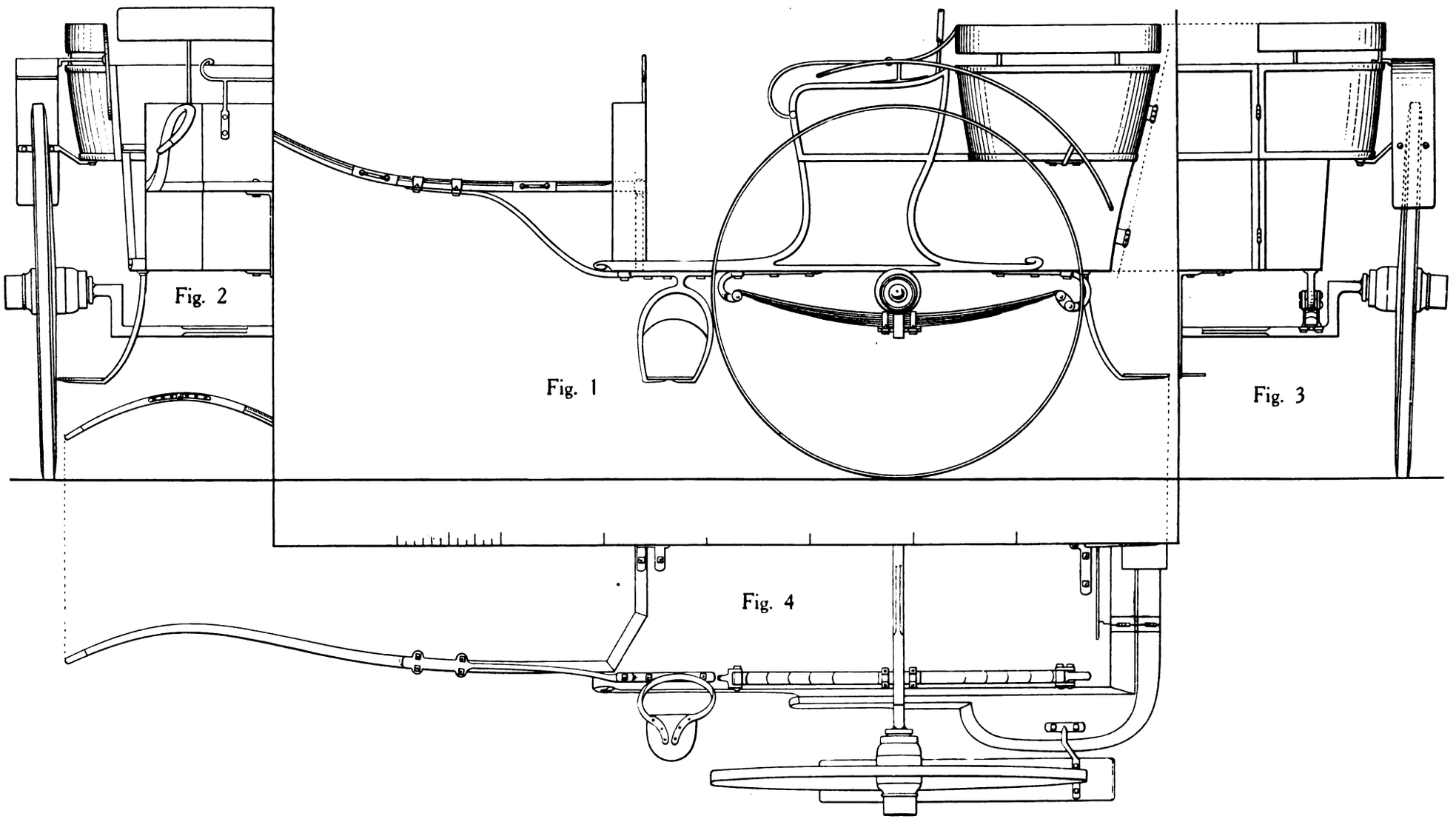


Driving Wagon With Cut Down Front.
Built by the Watertown Carriage Co., Watertown, N. Y.



Straight Sill Surrey with Handsome Seats.
Built by the Union City Carriage Mfg. Co., Union City, Ind.

Digitized by Google



WORKING DRAFT OF GOVERNESS CAR.

Scale, ¾ in. to the foot.

Described on opposite page.

Digitized by Google

Wood-working and Smithing

DESCRIPTION OF WORKING DRAFT OF GOVERNESS CAR.

Drawings on this and opposite page.

Of all the light carriages which have come into prominence during the last twenty years, there are none outside of the motor car, that have gained such a firm hold upon the public confidence as the governess car.

It has been produced in many styles, but still preserving its "Tub" origin in its bulky body, on which there is a small latitude for the display of fine lines. But, though the governess car made its chrysalistic appearance on the lines of the "Tub," yet it has crept forward by slow degrees, until it now holds a foremost position among light two-wheeled carriages, built by the nations of Europe and America. We thus see in a sternly practical way how from small beginnings evolution works its slow and silent trend, until it blossoms into the full flower of a vehicle of distinct character and catering to a specific use.

Although the governess car is invariably built with a square body, and the fashion alternately to round corners, yet breaches have been made which still preserve the full uses and advantages for which the car was first designed, but give a more artistic effect, and at the same time a guise of vehicular superiority to the character of the carriage itself.

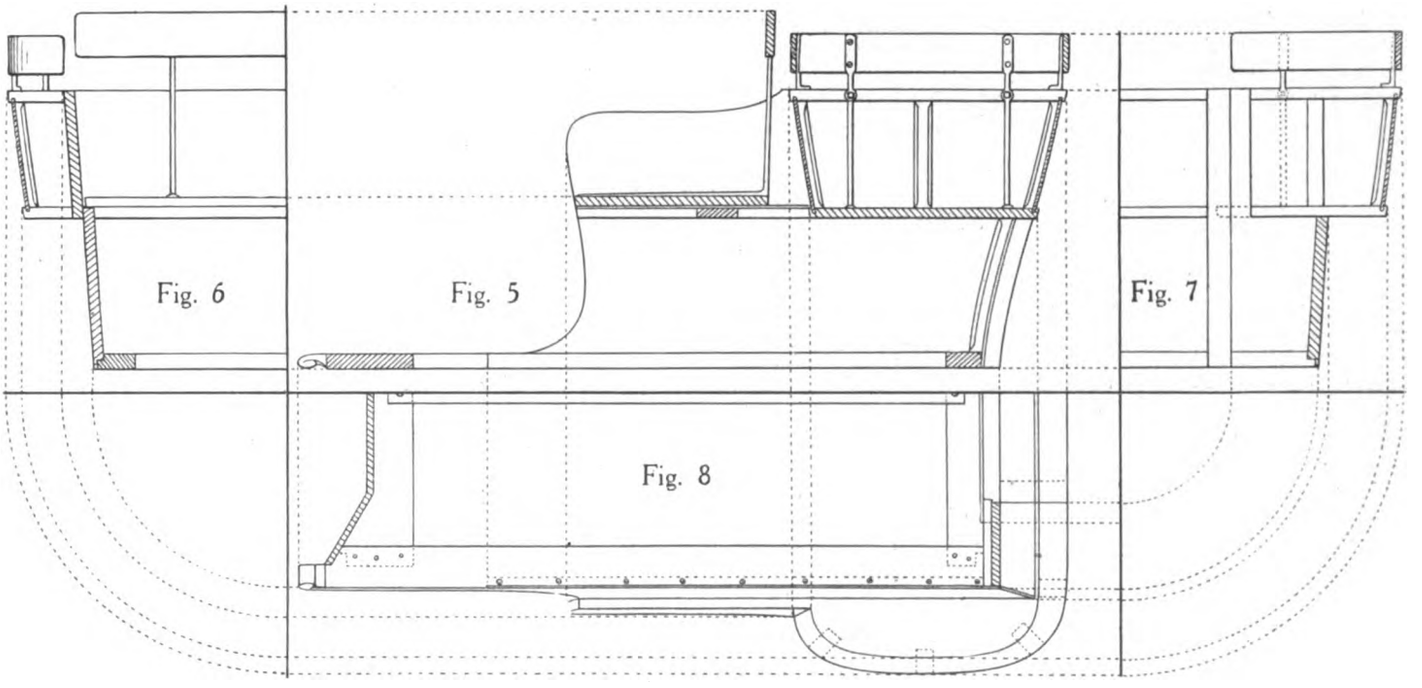
To supplement these alterations, we give herewith an original design, which, while preserving the elements of easy access and convenience so characteristic of the "Tub" governess car, enrich its outline, and brings its construction and suspension into the front rank of those two-wheeled carriages so exclusively patronized by the elite of lady carriage users, and more especially those having a family they wish to drive out with.

In this respect the governess car possesses a humanizing attraction, which has made the humble little vehicle very popular, hence any element in design, or construction, that will still further enhance its utility and attractiveness, will appeal to the tastes of those to whom it has made itself so necessary and useful.

The design offered here is constructionally more expensive than the purely elementary build of those so long obtaining, but its style appeals to a higher grade of buyer, and thus extends the commercial field of its supply.

The designs of governess car which give access to the front of the body, the shaft fixing being on the plan of a hansom cab, which has its shafts rigid, have been varied, but striving for a pleasing and useful difference, without laying themselves open to being thought merely alterations shorn of improvements.

The working drawing given here is of pleasing outline. The design showing a strong departure from the stereotyped style of the governess car obtaining, and is a development that lifts the vehicle from the ruts of a settled and arbitrary groove.



Working Draft of Body of Governess Car—Scale, ¾ in. to the foot.
Description on this page.

As practical and technical students of carriage manufacture, we know that in the painting of a carriage, how important it is that the first coat of lead color given to a body should be properly balanced in its composites, and that the lead—oil and driers, colorings and turps should all be in their correct proportions; and, most particularly, that the priming be put on in a proper consistency, and worked and dressed off by a workman whose hand has been educated to the sense of touch with the brush, so that the subsequent coatings may take their correct coverings as foundation supports to the basic structure upon which thorough coach painting depends. The first coat of lead color seems insignificant in itself, but the rich embelishment of high-class painting depends upon it. And thus it is in the designing of carriages; for from the crude and shapeless prototype, the "Tub," the present highly popular and smart governess car has grown into use and general favor.

The body under description is constructed to allow the front

Digitized by Google

seat to face the horse, while the hind seats are made to face side ways, as cars are at present made in their full completion.

The body is made in an elementary way, though the lines are rich and aristocratic in their cut. And this is the point to be kept in view in building this class of carriage, for it is quite a commercial mistake to invest a carriage supplying a want, which alone requires simplicity and effectiveness in construction and design, to employ expensive methods in building them.

In this body the sides are of ⅞-in. stuff, the front top quarter being also of the same solid material as the sides, to which the quarter pieces are screwed from the inside. The ogee line of the back of the front seat is formed in moulding planted on only, while the hind seats can be made of solid ¾-in. stuff bent to the required shape and dimensions by the bent timber manufacturer, as is generally done in this class of work. Or the seats can be framed and panelled in ¼-in. mahogany, or in metal, as motor car bodies are mostly done in now. In the latter case the panels are nailed or screwed to the framing, which is boxed down, and the moulding is then nailed on. Of course, in the matter of framing and panelling, the panels are grooved in and the mouldings worked up in the solid.

When the panels are bent in solid boarding they are supplied with square lined round corners, and can only be cut up to lay at a backward angle, while the line of the ends are square up. But if a pattern of the shape of a panelling in the working drawing herewith is furnished, the boards would be cut out to the shape in the flat, and when bent to shape would give the conical formation shown in hind seat panels in the elevation drawing, Fig. 1.

The sizes are: full length of body on bottom side, 5ft.; length of body on seat line, 39 in.; depth of body side, 13 in.; depth of front top quarter, 9 in.; depth of seat panelling over all, 11 in.; width of front seat on moulding line, 16 in.; length of hind seat on moulding, 19½ in.; on top, 24 in.; width of body on bottom, 34 in.; on top of side, 35½ in.; width across hind seats on bottom, 46 in.; on top, 48 in.; width across front seat overall, 37½ in.; on top of quarter, 39 in.; width of door, 19 in.; width of hind seats, 14½ in. over all.

The hanging is on grasshopper springs and scrolls. Length of springs, 38 in. to centers; number of plates, 6; width of plates, 1½ in.; compass over all, 4 in. Length of axle over collars, 44½ in.; width over solid flaps, 33 in.; width of same, 1½ in. by 5 in. long; depth of crank over all, 6 in.

Height of body from ground, 24 in.; height of wheels, 44 in., Warner patent; spokes, 1½ in.;; other sizes to standard. Tires, 1¼ in. India rubber. Length of shafts, 5 ft. 6 in. on center line of plan, Fig. 4; width between points, 18 in. Height underneath tug stop, 42½ in. The shafts are framed in hexagon shape, and are edge plated on the inside, up to the side stay foot, while the bottom of the shafts are plated right round. The side stay is forged with butterfly lugs to take the band clips, while the foot is lipped on to the step, thus making a clean job of the fixing. Height of front and hind steps from ground, 12 in. The shovel design of step is the most suitable, as well as the most fashionable for this style of two-wheeled carriage. Height of dash from bottom side over all, 20 in.; height of rein rail, 5½ in. To steady and strengthen the shaft framing, a center stay is fixed to the cross piece of the hexagon bar, and to the cross bar of the body.

TO SECURE BODY PANELS WITHOUT OUTSIDE SCREWS AND PLUGS.

For many years it has been the universal custom to secure the panels of light work with screws, which are counterbored in the panel, and when secured or driven in with the screw driver a plug of the same wood as the panel is glued and driven in the counterbore. No matter how well the plugs have been fitted and glued in, the same plugs in time assert their presence by getting outside of or projecting beyond the panel. Many devices have been projected and tried to overcome the obstacle, none of which have been able to combat against natural influences and causes.

After many years' study on the subject, the writer is now able to present an original method which he is positive overcomes the evil—very simple and effective and free for the trade to apply at pleasure.

Fig. 1 shows a section of the rocker, of which A is the upper section, beveled as shown. This form does not permit of the

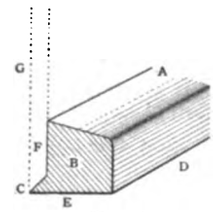


Fig. 1

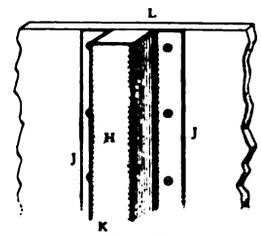


Fig. 2

lodgement of water or moisture. B, end of same; E. bottom; D, inside portion; F, outside to which panel is joined; C is a beveled web projecting from the outerside of the rocker. This web is beveled because a perpendicular joint has a faculty of lifting water quicker than one slightly horizontal. Dotted line G represents the panel. The panel is fitted so that when sesured its bottom edge is flush with the bottom of the rocker.

Fig. 5 shows a plate fitted with holes which runs the whole length of body bottom on each side, also one on each end, fitted with screws. When the panel is adjusted the plate is secured to the bottom of the body, the outer line of screws entering the panel, the inner line entering the rocker, rendering that part of the panel an absolute fixture.

Fig. 2 illustrates method of securing panels to seat posts.; H, main or inner part from which project flanges JJ having holes

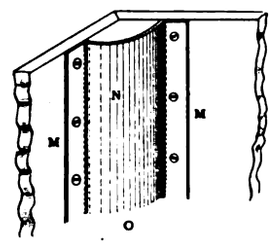


Fig. 3

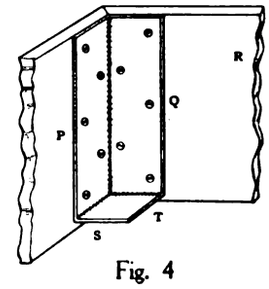
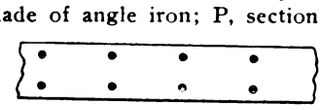


Fig. 4

for screws to secure panel, using screws slightly shorter than thickness of panel; K, lower part where tenon enters rocker; L. upper section.

Fig. 3 outline of front and back corner posts. M M, webs for securing the panel; N, body of post; O, bottom end where tenon enters body. Posts made in this manner may be finished and rounded to suit.

Fig. 4 shows another style of front corner post, which is made of angle iron; P, section for side panel; Q, post for se-


Fig. 5

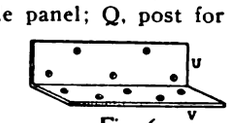


Fig. 6

curing front panel; R, part for dash; S and T are parts turned up from same by which means they are secured to the rocker.

Fig. 6 is a special plate to secure the panels above the rockers—U for the panel, V for the rockers. It would be well on wide bodies to apply two to each end, each about two and one-half inches in length. The same would answer one between each of the seat posts and one between the back seat post and back end. For the joints of the sides, put on two on each side, three inches long, or one on each side six inches long.

As a matter of course, all the wood parts are to be glued on, or secured with glue. The writer suggests that clear white lead be used in adjusting the iron to the wood.

Digitized by Google

TO STUDY SOUTHERN FORESTS.

An important step in the general movement to bring many of the rich stands of timber in the South under a scientific plan of forest management is the offer made by the school of forestry of the University of Georgia at Athens, Ga., to furnish timber owners experts who will examine and report upon any of the forests in the State.

The object of the offer is to collect information in regard to the forest resources of the State, to spread a knowledge of forestry and to improve forest conditions. The forest school will furnish the experts free, and the only expense which will be borne by the forest owner will be to pay for the traveling and subsistence expenses of the expert while making the examination. In cases where several owners of the same locality apply the expenses will be prorated.

When applications for examination are made, the owners have been asked to give their names and post office addresses, location of tract, area of tract, character of forest as shown by the kinds of trees growing on the land, the conditions of the forest, whether mature, original or second growth, whether the land has been burned or cut over, and the wishes of the owner regarding the use of the land.

A NOVEL AND VALUABLE SCROLL WRENCH.

The writer flatters himself that he is not the only vehicle mechanic who during his mechanical life has wished for a third hand just for a moment, so that it would not be necessary to let go with either of the two he has ever had about him. How often the occasion arises to bring forth such remarks as, "If I

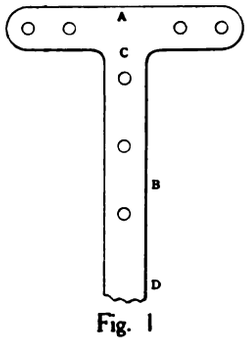


Fig. 1

could only drive that wedge in another quarter inch." "How can I drive that bolt in and keep the pieces together while doing so?"

Again, how many smiths and finishers would walk half a mile to have some other fellow tell them how to make his twisting or scroll wrench take hold when desired and not invariably let go at just the moment you wished it would hold fast. Many

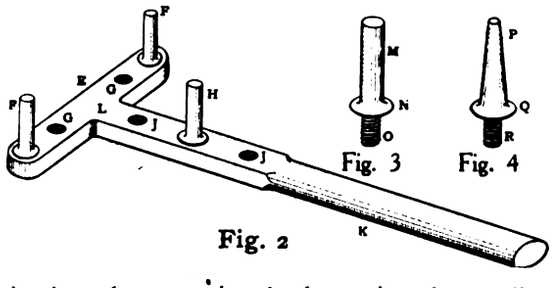


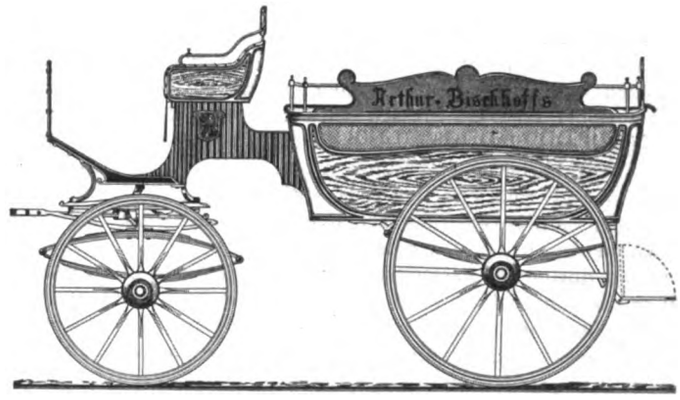
Fig. 2

Fig. 3

Fig. 4

mechanics have been perplexed when using the scroll wrench, and wished for a way out of it. When the writer became tired of trying to invent something to fill the bill, after many years it came spontaneously. A certain task had to be performed which the ordinary two-tined wrench would not effect. Finally the three-tined wrench was thought of, and one was made temporary to suit the occasion, and the work was done by means of the temporary affair. The new one was made to be adjustable, so as to suit for more than one tight place.

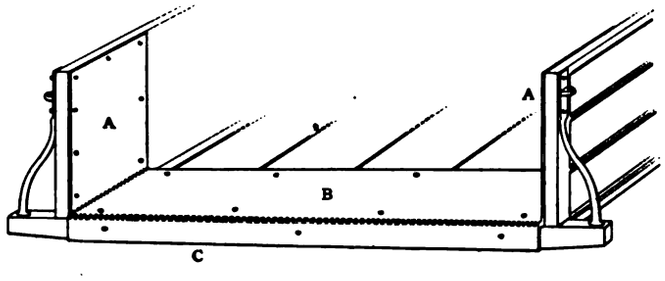
Fig. 1 shows in outline how to begin to make one. A, cross head; B, stem; C, where stem and cross head join; D, section of hand piece. Holes are for shifting or changing the tines to suit the work engaged on. Fig. 2 shows the tool complete. E, cross head with tines FF inserted, and holes GG for changing of tines. H is a tine set in stem with holes J J for changing stem tine to suit; K is hand piece; L is where cross head and stem are joined. Fig. 3 shows tine with parallel sides. M, tine; N, resting collar; O, threaded end for nut or to screw in to suit. Fig. 4 shows a tapering tine P, when same may be necessary; Q, collar; R, threaded end for nut or to screw in to suit. For quick changing the tines on cross head may be worked by means of traversing screw as per the monkey wrench.



German Design of an Open Delivery Wagon.

BACK-END INSIDE PLATE FOR EXPRESS AND ICE WAGONS.

The writer observed recently two vehicles, the condition of the hind end of each body at the floor and side panels suggesting the present chapter. One was an ice wagon, the other a delivery wagon, each of which had a strip of about two-inch band iron across the bottom of the hind end. The bottoms of each at the tail bar and six inches ahead of same were a mass



of irregular splinters. Prime factors for the production of lockjaw and other painful companions.

The diagram accompanying provides a better and safer construction for the rear ends of the bodies of commercial vehicles, one which would resist the wear and weight of heavy merchandise. We show the plate and place of its application to the body. A A are the ends of sheet iron plate turned up on inside of body and even with top rail of body. B is the bottom part of plate, which extends across body from panel to panel. C is a piece of the bottom plate turned down to cover the tail-bar, insuring its protection. The plate is screwed to the side panels, floor and tail bar, according to holes shown. Make plate of No. 10 sheet iron, and six or more inches in width.

Digitized by Google

PAINTING AND UPHOLSTERING

SOME NOTABLE COLORS FOR BUSINESS WAGON PANELS.

Red pigments continue to be favorite and fine looking colors for panels of business wagons, but, as a rule, the most popular reds are the deep rich ones, with plenty of tone to them, but lacking in that strain of over conspicuousness which makes them so often on offense to the eye. A red that is much seen on certain styles of New York, Boston and Philadelphia business wagons is known as Grosbeak red, deep. It is an exceedingly brilliant color, and suited to belt panels. Julian red, medium and deep, is another popular city red, with a flash of unexcelled brilliancy to it. Hessian and azetec red are likewise smart panel colors. Classed with these are also aurora and Armenian red, deep, together with astrakan, rubens, oriflamme, permanent, barberry, and flamingo red, medium and deep shades. These are all rich, effective reds, with plenty of tone and effect to them. Moreover, they are pigments sufficiently opaque to be conveniently handled over good grounds. Upon paneled top wagons, during the past season or two, soft toned blues running all the way from light to dark have been much in evidence, and, if anything, the popularity of these blues is increasing. Azure blue is perhaps the lightest member of the family, and while this color is largely used for striping, it is also used with great effectiveness upon belt and other narrow panels where display or contrasting effects are desired. Cobalt blue is another light blue of a magnificent tone. Indeed, a more charming blue would be hard to imagine. Royal and coach blue are decidedly fine rich blues. Of course, ultramarine blue, in three shades, must always be reckoned with, for without this color carriage and wagon painting would be poor, indeed. Then we have Richelieu blue, a color of wonderfully engaging properties; Holland blue, Victoria blue, Imperial blue, in three shades, and Automobile blue, which, by the way, is an unusually attractive panel color for special effects.

Yellows have always been popular business wagon panel colors. The greatest favorites at the present time are Brimstone yellow, sulphur yellow, French chrome yellow, Milori yellow, three shades; orange chrome, medium and deep; lemon yellow, primrose yellow, Naples yellow, cream and straw color. The yellows are both useful and charming pigments, fairly easy to handle and place upon the surface, and invite striping effects of a wide range.

In greens we have olive, Quaker, Brewster, Merrimac, Milori, and Adams Express green, together with fern leaf, cerro, palmetto, columbian, onyx, russet, pea and willow green, as the marked leaders in wagon panel work. As a family, the greens are, in a sense, the mainstay of both carriage and wagon painting. They are colors of royalty, and possess a capacity for furnishing brilliancy of tone unequalled by any other colors.

The brown pigments are holding their own, despite the fact that it was announced some time ago that their popularity was was on the wane. One apparent reason for the sustained popularity is doubtless due to the fact that manufacturers are, for the most part, steadily engaged in designing new shades of brown and enriching those already introduced.

There is, for example, among the leaders, pongee brown, originally introduced as an automobile brown; amber brown, a great favorite for delivery wagons in and around New York, Portland amber, a beautiful display panel brown; London smoke, an ancient and honorable color, along with VanDyke, golden and Royal brown, light and dark, and the siennas. While the browns, as a rule, are in no wise difficult colors to lay solid and nice upon the surface, they are nevertheless somewhat difficult to locate in positions to enhance effects, and to get all that the colors are really capable of into the view of the beholder.

Lakes are coming into no small use upon the panels of the better class of business wagons. Among the foremost lakes, for wagon work, are light purple lake, a great favorite in Philadelphia and New York; coaching lake, deep, and light, Chaltemuc, Munich, crimson, scarlet and carmine lake. These are exceedingly beautiful lakes, and require, by reason of the delicacy of the pigments, grounds scarcely less rich than the lakes themselves.

Then to-day there are furnished some brilliant wine colors, in at least three shades, which by virtue of their permanence and fine display properties, are being extensively employed upon wagon surfaces. The wines are easily brought forward to a finish, and, in the main, are very durable, and respond graciously to striping effects.

THE SET ROOM AS A VARNISH ROOM ACCESSORY.

Carriage finishers the world over are ever ready to acknowledge the indispensable nature of the set room as an adjunct of the varnish room. This room, of course, as its name suggests, should be so arranged that it can be made absolutely dark. Here the freshly varnished surfaces for the first few hours following the flowing of them with varnish may be stored while the sensitive and luminous material is developing to a condition where it is free from dust and dirt and the insects which invade paint shop quarters during the summer months. It is not to be understood, in this connection, that finished work should be stored in these inky black apartments beyond a time sufficient to insure against the enemies above referred to. During these first few, and, we may add, critical hours, in the lifetime of the varnish upon the surface, it flows to its best measure, acquires a promise of most excellent brilliancy, and escapes numerous enemies. When these purposes have been served—which they will be in the course of a few hours, or, at most, over night—it is in the highest degree essential that the surfaces be removed to an apartment flooded with light free from the glare incident to sunlight.

The set room may properly be proportioned in size to the size and capacity of the varnish room. An apartment 6 x 9 feet will serve the uses of an ordinary paint shop. Have it connected with the varnish room by a sliding, or, better still, a rolling door large enough to permit the passage of any carriage or wagon body not out of ordinary. Outfit the room with a system of ventilation amply sufficient to furnish plenty of pure, fresh air. If a window or two can be provided, so much the better. Furnish these with roller curtains so that when the room is occupied with work it, the room, can be made surely dark.

After storage in the set room with its absence of light the finished surfaces when exposed to the light—to all the light possible, let us repeat—will develop an increased brilliancy and will likewise harden and "cure out" to a serviceable condition to an extent they would not otherwise do.

NOTES ON CARMINE.

Of all pigments carmine is perhaps the most admired. It is at once the most radiant and the most brilliantly effective color known to the painter. And yet it is, on the whole, a comparatively sensitive color when placed within range of certain regions. Nearly all acids change it from a brilliant to a common-

Digitized by Google

place yellowish red. As an exception, boracic acid, instead of changing the color for the worst appears to redden it.

Ammonia, soda and potash change it to a crimson violet. Lime furnishes a crimson violet precipitate. Alumina combines with it and precipitates it as a very beautiful red. Porotoxides of tint changes it to crimson violet. Peroxide of tin changes it to yellowish red. Salts of iron turn it brown. Salts of lead convert it to a violet color, as does salt of copper. Nitrate of mercury gives a scarlet red precipitate. Chlorine turns it yellow. It is to be observed, therefore, that carmine has numerous and active enemies; more of them, in fact, than most other pigments.

The foundation coats, or ground work, as such coats are more generally known, must necessarily be as smooth and clean and compact and, above all else, as near to the real color of carmine as the skill and color sense of the painter can provide. To be sure, carmine is susceptible to a marked degree to the various grounds which are employed to support it. It can be flowed with highly brilliant effects over English vermilion, and again for a deep rich carmine it can be used over Indian red, or over a wine color used over Indian red. Reds fairly without number, and intermediate between the lightest and darkest, furnish exceptionally adaptable grounds for carmine. However, we believe that the last coat of ground color for carmine should contain enough of the carmine itself to control very decidedly the character of the ground. Then the actual carmine glazing should carry for best results only about one-half ounce of the pigment to each pint of varnish. Then apply to the surface in the nature of a varnish coat flowing on a full, abundant body of the glazing material. To look rich and fine, carmine needs to be carried in a strong flow of varnish.

GROUNDS FOR LAKE AND OTHER TRANSPARENT COLORS.

Lakes, carmine and other transparent and semi-transparent pigments stand or fall, in large part, to whatever extent the ground or basis pigment is strong and rich and endowed with fullness of life. That the basic coats should be of the proper tone and color, intimately allied in this respect to the glazing pigments above then goes without saying, although the mistake is often committed of laying great store by these matters alone and neglecting the weightier points of the issue involved.

The chief quality, or, at any rate, the quality without which all others fail, is permanence. Durability is, in fact, the corner stone upon which all success in the development of transparent and semi-transparent colors is founded. "Handsome is as handsome does" applies with telling effect in respect to all these colors. While it is granted that the transparent colors are employed chiefly for the enrichment of the basic pigments, it must also be remembered that these basic pigments contribute the greater portion of the sum total of whatever durability, and, in turn, beauty, the transparent colors may prove to possess.

For years that are reaching back toward a quarter of a century, the practice among a large following of carriage painters of using a stout binder of varnish in all grounds for transparent colors has been in vogue, and, on the whole, the results have not been directly disappointing. Neither, it must be admitted, have such results been sufficiently successful to warrant continuing the practice, and because of this growing uncertainty relative to the durability arising therefrom pure raw linseed oil has been substituted for the varnish. And it may be added that oil has given, and is now giving, better and by far more uniform and reliable results. Raw linseed oil is the ideal binder, having a natural affinity for pigments, with which it unites and furnishes, when carefully employed, the requisite elasticity and power for holding in unity the invisible atoms of pigment. Use for a color to dry over night—having reference now to japan ground pigments—one part raw linseed oil to eight parts of turpentine.

This will fix the ground color securely in place and enable it to hold out the transparent pigment above it in a way to insure length of days and richness of appearance.

TRIMMING A GOVERNESS CAR.

The governess car has from its prototype, the "Tub" cart, become a smart vehicle of fashion with ladies desiring to drive out with their young families. It is also a favorite two-wheeler

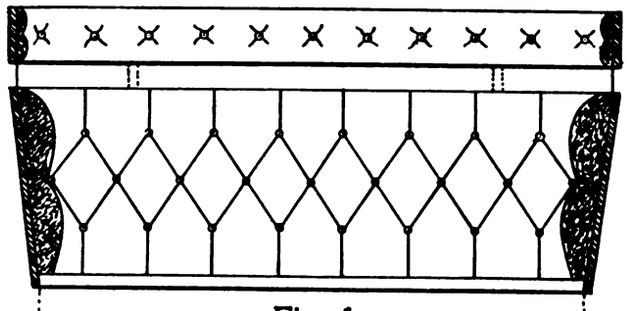


Fig. 1

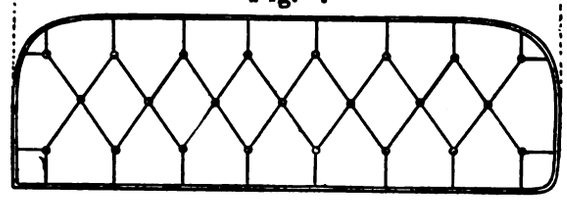


Fig. 2

for country driving, and at horse shows it is strongly in evidence in exhibiting the actionable qualities of cob size horses to the best advantage.

The upholstery in this car is of varied style; in some cars the cushions and back rests are only trimmed in cloth or other out-

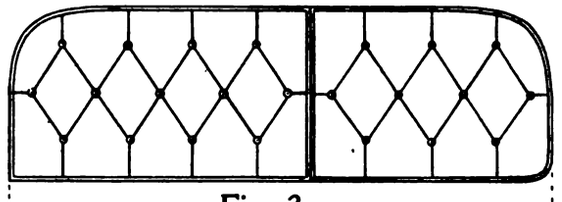


Fig. 3



Fig. 4

side wearing material. While in others the seat quarter sides are squab covered, with back rests to match. But this style in finishing is only worked on the most expensive and highly finished cars.

The illustrations given here show this style of upholstery.

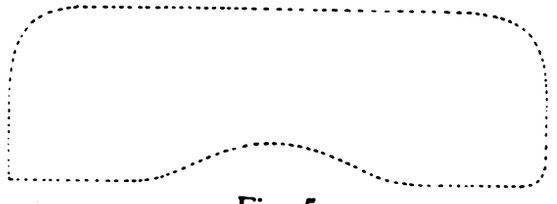


Fig. 5

Fig. 1 shows the back squab of body side and the back rest together which gives a comfortable seating. The cushion on the driving side is made sectionally; that is with a short cushion for the front end of the seat and driving box and driving cushion at

Digitized by Google

the driving end. This is a much better plan than hollowing out the seat along its center, thus narrowing its central width, as in Fig 5, to allow the driver to angle his body round a little in the direction of the horse. The cushion on the near side is made plain the whole width of the seat, as in Fig. 2. Cloth is



Fig. 6

not the best material to upholster these cars in; it is of too polished and finished a surface to suit the rural and homely character of the design of a governess car.

Fig. 3 shows the shape and position of the driving seat cushion and driving cushion in plan. Fig. 4 shows its front section, while Fig. 6 shows its end section.

A carpet finish of cloth makes a very suitable material to trim these cars in; the material has a warm and cosy look most suitable to the character of the carriage, but the new motor hide, so extensively used in motor car upholstering, is a capital substitute for cloth, or carpet cloth, for governess car work, while it is most suitable for outside wear, being to a large extent impervious to water.

ENGLISH PATENT LAW HITS AMERICANS HARD.

Ex-Judge Duell Representing American Manufacturers in an Effort to Obtain Modification of the Law.

Judge C. H. Duell, who in 1906 resigned a life position as Associate Justice of the Court of Appeals of the District of Columbia, is in London seeing what can be done to modify the British Government's patent act, which goes into operation on August 28 of this year. The provisions of this act and its effect on American trade have been printed in this publication. In an interview on this subject Judge Duell said:

"The new patent act has met with such wide approval among English manufacturers, and the present Liberal Government is so proud of the gratifying reception of the act, that, I am sorry to say, there seems little chance of effecting any material modification of the provisions. As is well known, not less than four or five retaliatory measures were introduced in Congress by American manufacturing interests last session. As there are about three times as many American patents registered in England as English in America, American manufacturers concluded to attempt to bring about a modification of the new act by other means than by passing retaliatory measures.

"When I approached the English Controller General of Patents I explained our liberal patent laws and benefits which Washington himself, in 1788, extended to foreigners, who, for a fee of $35, may register a patent and secure protection for seventeen years, this period being considered ample in which an inventor may obtain an adequate reward for his work, and at the expiration of which the patent becomes public property. I also drew his attention to the fact that four years was an extremely short time in which to allow the inventor or manufacturer of an article patented.

"The Controller's answer was that we had no reason to complain of the new act since we did not enact laws to protect foreign authors, whose efforts represented the very highest kind of brain work. He promised, however, to look into the matter.

"One of the most hopeful signs for a modification of the act, however, is the attitude of English inventors, who are also hard hit, and also the inventors of the British colonies who patent here. Their solicitors say that they threaten to work up retaliatory measures against the mother country."

Among American manufactures which will be particularly hard hit by the new act are typewriters, cash registers, all kinds of fine steel working machinery, laundry, boot, shoe, and leather working machinery, elevator and pneumatic tube parts, in addition to a thousand and one small articles sold by Americans under the protection of English registered patents.

PROMOTING THE WEAR OF CHAMOIS SKINS AND SPONGES.

Once upon a time a dealer in sponges and chamois skins bravely assured the writer that dirt and the natural dust of the paint shop had nothing to do with the wear of these indispensable articles, and as that assertion was printed and given due circulation in the trade press, it has doubtless been the means of some practical abuse of these utensils.

In the first place, we believe it will be admitted without citing chemists for authority, that all forms of dirt, whether floating in the air or piled in threatening accumulation upon shop furnishings, are not only a menace but a positive injury to leather and to fibrous growths of a marine nature.

The practice, therefore, of permitting the chamois skin and sponge supply to be left hit or miss fashion about the shop to catch the increment of dirt daily in motion is wholly bad, and has no part nor lot with economical management.

Both chamois skins, or, as the Englishman calls them, "wash leathers," and the sponges had best, as we advised in our earlier issues of The Hub, be kept when not in use in dust proof receptacles, and when putting them away, care should be exercised that they are in a clean state, not smeared and saturated with dirt and unwholesome substances. Even if there were no actual gain financially from this custom the satisfaction which comes from maintaining an equipment of tools and articles of every day use is in itself an all sufficient compensation. And in this connection we may say that this rule applies to the care taking of all paint shop tools. Chamois skins and sponges are to be classed as easily soiled and delicate supplies, and in washing and cleaning a good measure of care is to be observed.

With pure soft water and ivory or some equally dependable soap, make a fine suds in which well soak the articles, after which proceed to manipulate them in the hands until the uncleanly accumulations are softened up and at least in part eliminated. Then rinse in clean soft water, and after drying out thoroughly lay or hang away.

Frequent and timely washings of this sort removes the necessity of hard scrubbing, which is destructive to the articles, and it both promotes their wearing properties and insures more uniformly clean results.

RUSSIAN GOVERNMENT MAKES LARGE TIMBER GRANT TO AUSTRALIANS.

An Australian corporation has just received a concession from the Russian government to take out thirty million feet of timber a year from a forest in Siberia, 900 miles from Vladivostok, to be delivered in Melbourne, Australia, approximately 8,000 miles away, and nearly three times the distance from New York to San Francisco.

It is likely that no lumbering operation of recent years more strongly illustrates the scarcity in the timber supply in all parts of the world. In the news of the concession, told in an American lumber journal, is the suggestion of the difficulty that all countries may have to encounter in gettng the wood which they need in the future. Every year timber cruisers are going further and further afield and cutting trees which, in former times of abundance, they passed because of the inaccessibility of the forest.

The inventor of the carpenter's steel square was a poor blacksmith of South Shaftsbury, Vt., Silas Howes by name, who conceived the idea of welding old steel saws together at right angles and marking them off in inches. He found the demand instantaneous, and his profits were invested in patenting his invention. This was just after the war of 1812

Digitized by Google

General Topics of Interest to Trade

MEETING OF NATIONAL WAGON MANUFACTURERS' ASSOCIATION.

The National Wagon Manufacturers' Association held its mid-year meeting in its rooms in Chicago, Ill., June 4 and 5.

The attendance was representative of the farm-wagon interests throughout the entire country and the spirit shown was remarkable for its conservatism in reviewing past conditions and prospects of the future.

The action of the manufacturers in this line recognizing from the first the futility of making any attempt to stimulate trade by any of the demoralizing practises common in times of trade dullness has not only protected their own interests but those of the retail dealer as well, whose wagon stock at the time of the so-called panic was, in most cases, more than normal, and had prices been lowered, whether possible or not, the retailer would have suffered much loss. It is unquestionably true that all lines were being pushed more rapidly than the actual consuming necessities demanded, and whether the financial stringency had occurred when it did or not, we should have had a period of lessened demand in 1908 just the same.

The business interests of the country having now done nearly eight months' penance, during which time wagon stocks have been greatly reduced, are now making ready to met the demands that splendid crop prospects are forcing upon us. A canvass of conditions at the factories shows that the greatest curtailment of output since 1893 has occurred in wagon factories generally, and in consequence of this the cost of the product to date has increased between fifteen and twenty per cent., considering the present cost of materials in this calculation. Anyone familiar with manufacturing and the fixed or overhead expense in maintaining organiztion will readily realize the truth of this statement. There will, therefore, be no reduction in the selling prices of wagons which have continued since last year at prices that do not produce a fair return on the extraordinary amount of capital invested in this line,—in fact, with the restoration of normal conditions necessary price of adjustments will have to be made in maintaining the present high standard of materials and construction.

The greatest difficulty now confronting the manufacturer is the delay in receiving his customers' specifications and the fact that not having them, the wagons he has manufactured up to this time are limited in number, and if the fall shipments for a good crop trade are to be crowded into the next three or four months, the utter impossibility of meeting this demand is clearly apparent. Good crops are the foundation of all material prosperity, and as every bushel or pound of crops must be carried in a farm wagon, the demand this fall is almost guaranteed.

Wagon terms also received much attention,and it was shown that a great deal of progress had been made toward shortening them and that not a little assistance had been rendered by leading dealers, who realize that they must purchase and sell nearer a cash basis in order to meet their competition. Efforts will be continued along these lines.

The subject of standardizing materials and the product within lines that do not affect the individuality of construction of any manufacturer receive consideration and much progress is being made.

The Association Material Bureau, whose province is not to buy but to seek and locate desirable materials, reported stocks of wood materials at factories good but at the mills and in the country only fair.

The official wagon warranty, which was jointly adopted by the dealers and manufacturers, was reported on and much progress shown in its use. It was also shown that a few manufacturers had not urged the matter upon their trade as strongly as they should, and some dealers, while not opposing it, were careless or indifferent to using it. The manufacturers will now give it full attention, and it is believed the dealers will make good their pledge made through their Federation to make use of it in all wagon sales.

The people generally, encouraged by the crop prospects, seem to have put the past behind them (except the lessons that have been learned) and will be found as pushers for prosperity.

E. W. McCULLOUGH, Secy.

BREWSTER NAME TAKEN AWAY.

Brewster & Co. Win Their Fight Against the House Styled "J. B. Brewster & Co."—Failure Follows Decision.

The failure of Cairn Cross Downey, Henry M. Duncan and George M. White, who had been doing business as a joint stock association under the name of J. B. Brewster & Co., carriage builders, as announced in the May issue of The Hub, followed close upon a decision rendered in favor of Brewster & Co., the well-known carriage manufacturers, in a suit brought by them against the J. B. Brewster & Co. concern. The suit was to restrain J. B. Brewster & Co. from using the name of Brewster in their business.

Brewster & Co. have been in the carriage business for more than half a century. Another house, known as J. B. Brewster & Co., was organized about fifteen years after Brewster & Co. began business, and the two houses for a time were engaged in the keenest rivalry. In 1895 J. B. Brewster & Co. made a general assignment for the benefit of their creditors, and after an unsuccessful reorganization J. B. Brewster, who was over 80 years old and had many judgments standing against him, sold his name to C. G. Downey, and the joint stock association of J. B. Brewster & Co. was then formed. This concern opened their warerooms only a block away from Brewster & Co., who had occupied their building at Broadway and Forty-seventh street since 1874.

BOSTON CARRIAGE MAKERS DINE.

The Association of Carriage and Wagon Manufacturers of Boston and vicinity held its closing social gathering, before the summer vacation, at the Revere House, June 10. There were seventy members present, including those of the varnish and iron auxiliary trades, who attended as guests.

Charles Waugh, of Cambridge, president of the association, presided, and introduced the toastmaster, J. Theodore Washburn, of Winthrop. The speaking was informal and was confined to trade topics. During the evening a pleasant musical entertainment was provided, the arrangements for which were in charge of the following committee: Patrick Healy, of East Boston; J. Theo Washburn, of Winthrop; C. M. Stoddard, of East Boston J. A. Kiley, of Somerville, and Frederick Hall, of Boston.

SWEET TIRE AND RUBBER PLANT SOLD.

The property of the Sweet Tire & Rubber Company, Batavia, N. Y., which had been manufacturing rubber tires for carriage wheels, was sold at public auction recently. John H. Ward, cashier of the Farmer's Bank, bid in the property for the sum of $10,000. The sale was the foreclosure of a mortgage for $50,000 held by the Rochester Trust & Safe deposit Company, as trustee for bondholders. The mortgage was foreclosed because of a default in a payment of interest which was due last fall.

Digitized by Google

CINCINNATI CARRIAGE MAKERS' CLUB DOINGS.

The May meeting and dinner of the Cincinnati Carriage Makers' Club on Thursday evening, May 14th, at Chester Park, was a very pleasant affair. There were present seventy-seven members, five guests and two representatives of the press. The weather conditions were delightful for this open air meeting. After due attention had been given to a very nicely prepared and served supper, which was fully enjoyed by all, President Armleder opened the meeting. The report of the Outing Committee was read and arrangements made for a sail on the Ohio River to Laughrey Island. The outing will occur on the date of the dedication of a new steamer, which will make her maiden trip. It will leave the landing on Saturday, June 13th, at 11 A. M.

There were sixteen new members elected, as follows: Robert W. Bowen, Theo. S. Beck, C. B. James, Frank Medeweller, William Clauss, Ferd. J. Zimmerman, A. Nutter, W. H. Murphy, A. P. Lounsberry, T. C. Leonard, E. F. Herrlinger, R. H. Harden, Geo. Budde, F. A. Bosler, F. E. Blunden and W. E. Parker. The resignation of Charles E. Firestone was received and W. W. Sechler was appointed to call upon Mr. Firestone with instruction to indeavor to induce him to remain in the club. The resignation of Mr. Jacob Faberer was accepted. The membership of John Ahr, of Ahr & Rost, was transferred to Geo. J. Rost, of the same firm. The membership of J. H. Parvis, deceased, was transferred to W. J. Peck, of the Hess Spring & Axle Co.

No special entertainment being provided for at this meeting, it adjourned early, all having very much enjoyed the gathering at the beautiful summer resort.

SAYERS & SCOVILL INCORPORATE.

The Sayers & Scovill Company, capital $150,000, has been incorporated at Cincinnati, Ohio, by W. A. Sayers, Flavel F. Virginia and Bessie K. Scovill, Francis M. Sayers and A. E. Eisenhart. The company will take over the carriage business conducted for years as a partnership by W. A. Sayers and the late A. R. Scovill. W. A. Sayers will be president; Flavel F. Scovill, vice-president and treasurer, and A. E. Eisenhardt,, secretary.

AMESBURY CARRIAGE BUILDER ASSIGNS.

Charles F. Worthen, a carriage builder of Amesbury, Mass., has made an assignment for the benefit of his creditors. He has been in business for about a dozen years and had been successful until the recent financial stringency. His liabilities are about $15,000, three-fourths of which is due local firms. Assets not stated.

SENDELBACH WHEEL CO. SOON TO RESUME.

E. C. Sendelbach, of the Sendelbach Wheel Co., whose plant at East St. Louis, Mo. was recently burned, has as yet made no plans for rebuilding. As soon as the insurance and other matters are settled, it is believed that arrangements will be made to continue business.

WILL SOON OCCUPY THEIR NEW QUARTERS.

Work on the new administration building of the Studebaker Bros. Manufacturing Co., at South Bend, Ind., is fast nearing completion, the outside work being nearly done. It is thought the office and clerical forces will be able to occupy their new quarters about the middle of July. This concern reports a lack in the demand along some lines, but the general tone of business is encouraging and prospects ahead are good. This is particularly true in the automobile department, where the demand for fine cars has been good.

NATIONAL HICKORY ASSOCIATION SECURES NEW SECRETARY.

The affairs of the National Hickory Association have increased in importance and latitude to a considerable extent, and the necessity for the furtherance of this organization in connection with the hickory supply and demand have become evident to all who have given the question any study of late, and it has now become necessary for the active handling of its affairs to be placed in the hands of a permanent paid secretary whose particular work it will be to promote its interests and who will be able to give time to carrying out the details.

There was one man who is perhaps more suitable to fill this position than any other individual in the United States, and



John W. Herron, Jr., President National Hickory Association.

the association is to be congratulated on having been able to secure Mr. H. D. Hartley, of the Pioneer Pole & Shaft Co., as permanent secretary of the National Hickory Association, the president of which is John W. Herron, Jr.

Mr. Hartley's practical experience in the hickory trade in the shaft and pole line, coupled with his former experience in connection with the Forest Service at Washington, and added thereto his liberal education and demonstrated natural ability insures further success for the association under an enlarged and advanced policy.

The retiring secretary, Mr. F. A. Curtis, and his associates deserve credit for bringing the work to its present condition, and without cost to the association made possible the larger work now before the organization.

The office of Mr. H. D. Hartley will be located in Detroit, Mich, box 108, where all correspondence should now be directed.

NEW DEALERS' WAGON COMPANY ORGANIZED.

Notwithstanding the failure of the wagon industry organized with dealers as stockholders in Missouri, the promoter of that enterprise is reported to have been successful in promoting a similar industry in Texas. It is said that a company has been organized under the name of the Dealers' Wagon Company, with main offices at Gainesville, Tex., with a capital stock of $100,000.

Digitized by Google

SENATOR FROM IDAHO DECLARES THERE IS NO DANGER OF TIMBER FAMINE.

Suggesting an amendment excepting Idaho from the States in which the Secretary of Agriculture may give permits for the exportation of timber from forest reserves, Senator Heyburn, in the Senate, ridiculed a chart of the Forestry Division, which was swung on the wall of the Senate chamber, marked with statements as to the number of years the forests in various parts of the country would last.

The Forestry Division, he said, was launching into the realm of prophecy in a way that would require greater wisdom than that possessed by the sages of old, when it declared a certain section would be shorn of its forests in 20, 30 or 40 years. They forget, said he, that timber grows, and he declared that "the supply of timber is as great to-day as ever in the world's history." There was, he said, no danger of a timber famine.

SECRETARY McLEAR'S CONVENTION ANNOUNCEMENT.

The program for the annual exhibition and convention of the Carriage Builder's National Association has been announced by its secretary. The following is a verbatim reprint of the Secretary's Announcement which is sent to each member of the Association.

Office of the Secretary.

Wilmington, Del., June 10, 1908.

The thirty-sixth annual meeting of this associatioin will be held in Chicago, Ill., during the week commencing October 11, 1908.

At the same time and place the annual exhibition of parts of vehicles, automobiles, models, new inventions, harness, horse equipment and materials pertaining to the carriage, wagon, automobile and accessory industries, will be held.

For exhibition purposes, the executive committee has engaged the First Regiment Armory, Illinois National Guard, Michigan avenue and Sixteenth street, a fine hall, with good light and well adapted for exhibition purposes.

The following rules and regulations have been adopted to govern the exhibition:

Exhibitors must be either active or associate members of the association.

The exhibits must be confined to models, parts of vehicles or automobiles, and to materials used in the construction of the same, or to coachmen's outfits, harness and horse furnishings. No finished vehicle will be admitted.

This exhibition is the members' own exhibition. They can take what space they may wish, from 4 x 4 feet to 100 x 100, or larger, if they desire, and as the exhibition is entirely for the benefit of the members, and as we never know their desires about the size of space they will need until the application is received; and also on account of the manner in which the space is sold—by mail only—it is impossible for us to make a diagram of the hall. For these reasons we cannot allow each one to choose his own location when making application for space. You can readily see, if we had a diagram several might choose the same location, and by so doing, lead to endless confusion.

Therefore no definite location can be allotted to any exhibitor on receipt of application. The space will be allotted in the order applications are received, and arrangements can be made when installing exhibits to group industries that desire to be so treated. Those making early application to the secretary will secure what advantage in location there may be, and also avoid the delay in securing their space on the day of opening. As far as possible, ample room will be furnished to all.

The committee will arrange to have the exhibition space policed by day and watched by night, for the betteh protection of the exhibits, but cannot and does not assume any responsibility for loss or damage, from any cause, so far as individual exhibits are affected. The exhibitor must arrange and care for his exhibit, and he must assume all responsibility therefor.

Exhibits can be placed in position on Friday, October 9th, and on Saturday, October 10th, and must be removed by the 17th.

The exhibition building will be opened at 8 o'clock A. M., and remain open until 6 o'clock P. M., every day from Monday, the 12th, to Saturday, the 17th.

As much of the hall as will be required will be marked off into 4, 8 and 12-foot wide sections, and aisles arranged about the reservations as liberally as the character of the floor space of the hall will permit.

The space will be sold in multiples of four feet, according to the following scale of prices:

4 x 4	feet— 16	feet.....	$5.00
4 x 8	feet— 32	feet.....	10.00
4 x 12	feet— 48	feet.....	15.00
8 x 8	feet— 64	feet.....	20.00
8 x 12	feet— 96	feet.....	30.00
8 x 16	feet—128	feet.....	40.00
8 x 20	feet—160	feet.....	50.00
8 x 24	feet—192	feet.....	60.00
8 x 28	feet—224	feet.....	70.00
8 x 32	feet—256	feet.....	80.00
8 x 38	feet—304	feet.....	90.00
8 x 42	feet—336	feet.....	100.00
8 x 46	feet—368	feet.....	110.00
8 x 50	feet—400	feet.....	120.00

Exhibitors desiring specially arranged spaces, both as to number of square feet and unusual dimensions, can be accommodated by early application to the secretary. Additional space to that already granted may also be arranged for, if exhibitors will forward applications for such additional reservations before the date fixed and published in this manual for installation of exhibits.

The charge for larger space will be in the same ratio.

Floor and wall space only will be sold. This may be furnished by the exhibitor with desk, chairs, tables, railing, etc., to suit his needs. But the committee or its employees cannot undertake to furnish any of these articles, although a list of well-recommended local dealers, carpenters and decorators may be had by application to the superintendent of exhibits, who will do all possible to facilitate the supplying of the needs of exhibitors.

No nails or screws shall be used to fasten either the exhibits or railings to the floor, as the contract with the regiment positively prohibits this.

Space about the sides of the hall of exhibits will be devoted, as far as possible, to exhibitors requiring wall space for standing, hanging, paneling or displaying in booths, that are wholly or partially enclosed. No booths of this character will be permitted as part of an exhibit in the clear space of the hall, if it shall obstruct vision by being enclosed, or be objectionable because of the arrangement of signs that interfere wiith the rights of other exhibitors, whose protests will be accepted as final and binding on the exhibitor so offending.

The space allotted to any exhibitor must not be sublet to anyone not members of the association. This rule is imperative.

No signs in the body of the hall shall be so displayed as to interfere with a proper observance of community interests. It must be an implied agreement on the part of exhibitors when reserving space, that the secretary, or the superintendent, shall be the sole and final judge of infractions of this regulation, and his decision shall stand.

Any damage to the building by any of the exhibitors must be settled for before the exhibits are removed from the building.

The association assumes no responsibility whatever for care of exhibits, boxes, crates, etc., other than to furnish such assistance to exhibitors as will enable them to more quickly to install exhibits, and to remove the crates to a storage place where they

Digitized by Google

are to remain as a matter of convenience to exhibitors, and at their risk, although the usual precautions, as stated elsewhere, will be taken to safeguard property as a whole.

Application for space should be made to the secretary now, and should state the nature of the exhibits, as well as the space required. As far as it is possible, the space will be assigned in the numerical order of receipt of application. The sure and only method of securing the best locations is to make early application.

Payment for the space taken can be made with the application, or, if the exhibitor prefers, can be made at any time prior to September 25th. Receipts for same will be returned by the secretary, and said receipts will be received as voucher for space, when presented to the superintendent at the hall.

We would suggest that goods sent for the exhibition should, if possible, be sent by express, prepaid. If forwarded by freight, experience has demonstrated that there is no surety that goods will arrive when wanted, unless they are shipped at least one week before the time the freight agent declares is ample for the shipment. The freight should be prepaid if prompt delivery to the hall is expected, after goods reach terminals.

Mark goods plainly, and in more than one place on the package or crate, as directed below, and be very careful to also mark on the package the name of shipper also. This precaution aids the committee in identifying goods in owner's absence, aids quick installation on spaces ready for exhibitor, and prevents loss by reason of non-identification.

Mark as follows: "Carriage Builders' National Association Exhibition, First Regiment Armory, Michigan avenue and Sixteenth street, Chicago, Ill.

For bulky exhibits, too large to send by express, arrangements have been made with South End Express, J. G. Kinney, Prop., 54 Harrison street, Chicago, Ill., to receive and transfer the articles intended for the exhibition from the freight stations to the exhibition. Should you desire them to take charge of your goods, we would advise you to notify them when goods are sent, the route, and if possible send them duplicate bill of lading.

The executive committee requests all exhibitors to be sure that they quote prices only to vehicle manufacturers.

The president of the association will appoint a Special Committee on Exhibition to examine the exhibits and make report to the convention of such articles as show improvement in their special lines, or show a high order of inventive ability.

By resolution passed at the annual meeting held in New Haven, Conn., October 17, 1883, it is required that any firm or company wishing to exhibit goods at the convention should have at least one of its partners or officers a member of the association; and the fact that a representative or employee is a member will not alone be sufficient.

EXTRACTS FROM THE CONSTITUTION.

Article III.

Section 1. The members of this association shall be persons engaged in manufacturing or selling vehicles for pleasure or freight.

Sec. 2. Associate members may be elected from any trade or profession pertaining to the vehicle trade, upon the payment of fees and dues prescribed by the By-Laws, which shall entitle them to all privileges of the association (including the annual dinner), excepting a vote on the election of officers.

EXTRACTS FROM THE BY-LAWS.

"The enrollment fee for active members shall be $5, and that of associate members $10. The annual dues shall be $5, payable in advance."

Applications for membership should be addressed to Henry C. McLear, secretary, Wilmington, Delaware.

HENRY C. McLEAR, Secretary,
Wilmington, Del.

By order of the executive committee of the Carriage Builders' National Association.

AKRON TIRE TALK.

Great activity in the tire trade is reported from Akron. Notwithstanding every bit of space and machinery is being utilized, some of the companies are reported to be thousands of sets behind in their orders. The sudden demand a month or so ago was thought to be only a spurt, but the continued demand has convinced many that there is a reaction from the business depression of last winter. Another reason given is that even wealthy men are re-equipping last year's cars with new tires in place of buying new machines. It is thought this rush will continue for another month.

Owing to the increasing number of automobile contests the tire makers have decided that they can enter only a part of them. They are very much interested in the preparations being made for the double trans-continental tour for stock cars under the auspices of the New York Times, as they believe the run will prove to be a test for tires especially.

On account of the growth of their tire business, the new six-story building of the Diamond Rubber Co. has already become inadequate, and it is thought a new structure will have to be erected for the Marsh rim factory when it is moved from Columbus to Akron. The recently built addition increased their floor space more than 230,000 square feet.

The Swinehart company have been extending the manufacture of their new demountable rim for motor truck tires. As with the demountable pneumatic tire rim, the new product for solid tires makes it possible to change tires quickly, thus rendering it unnecessary to lay up trucks for repairs on account of tire trouble.

Mr. J. F. Singleton, advertising manager of the Firestone Tire and Rubber Co., left on April 25 for a two months' pleasure trip through the West. After stops at various cities through the Southwest and spending some weeks on the Pacific coast and in the hunting grounds of Idaho, he will return by way of the northern route. In his absence, Mr. W. G. Slater, of Cleveland, is acting as advertising manager.

George J. Bradley, manager of the Cleveland branch for the Diamond Rubber Co., has also had the Detroit branch placed under his management, Mr. W. M. Parrett having resigned.

A new chemical laboratory is to be built at once by Buchtel College, of Akron, which will be equipped with a special rubber laboratory. It will be provided with modern appliances for research work in the chemistry of india-rubber, with a special view of affording opportunities to chemists in local companies to pursue advanced experimental work.

Akron rubber manufacturers are co-operating in the efforts of the commercial interests to organize an Akron chamber of commerce. C. B. Raymond, secretary of The B. F. Goodrich Co., and A. H. Noah, treasurer of The Diamond Rubber Co., are directors in the organization.

The Stein Double Cushion Tire Co. find it easy to reach the ear of the trade to-day, as carriage builders and repair men realize that there is more to the double cushion story than they had at first supposed. It takes time to interest some people, but an article of the sterling merits of the Stein double cushion tire is bound to win favor. J. Newman, the hustling vice-president and general manager of the Stein Double Cushion Tire Co., of Akron, O., is hot on the trail of vehicle builders and reports trade moving nicely in his line.

WAGON WORKS CHANGES HANDS.

The Weybourn Manufacturing Company, of Rockport, Ill., has been purchased by the Crescent Forge and Shovel Company, of Havana, Ill., the consolidation taking effect May 6. Both are manufacturers of wagons, shovels and plow-shares. The Weyburn Company was the oldest and largest concern of its kind in the State.

Digitized by Google

WORKHORSE PARADES BEING HELD ALL OVER THE COUNTRY.

The workhorse parade idea is spreading over the country, and appears in the most widely scattered places, from Boston, New York and Philadelphia in the East to Los Angeles on the Pacific slope, and from Grand Rapids, Mich., to New Orleans. In Chicago there has been much talk of a parade, but no parade as yet, although that city is said to contain more truck horses than any other in the world.

Boston, the pioneer in this matter, held its sixth annual parade on last Memorial Day. The entries numbered over seven hundred, and the quality of the horses shown was better than ever before. There were fifteen four-horse and three six-horse teams in the parade. The old horse class, which the directors consider to be the most important, contained about fifty entries, and was distributed in four divisions, according to the age of the horses. All work-horses that have served their present owner ten years or more are eligible for this class, provided they are in good condition and serviceable and sound. The prizes in this class consisted of gold and silver medals, street blankets and sums of money offered by humane societies and individuals. Similar prizes were offered for veteran drivers, and there were special prizes in the classes for horses that are most apt to be overworked and abused, such as local expresses, hucksters and barrel collectors.

Every entry judged worthy to be in the parade received a ribbon of some kind, and with each blue ribbon there goes a brass medal to be worn on the harness as a permanent ornament. Next year it is proposed to give a metal pin or badge to every driver who obtains a blue or red ribbon two years in succession. Sixty or seventy judges are required, many of them coming from distant points, for the judges have been selected and sifted with such care from year to year that it is considered an honor to be one of them.

The holding of the annual parade is not the only work of the Boston association. It maintains during the winter a course of free lectures on subjects relating to the care and use of horses. It employs a permanent agent, who assists poor and ignorant horse owners with advice, information and, in proper cases, with free shoeing, medical treatment, the gift of a collar or blanket, etc., and, finally, it holds an annual stable competition. Entries are received up to January 1, and after that date the stables are inspected from time to time, defects in the treatment of the horses are pointed out to the owners, improvements are noted, and, at the annual Memorial Day parade, medals and certificates are awarded to the stable foremen and to the owners of the horses provided that they reach the standard fixed by the judges. The stables are not judged in competition with one another, but are judged individually and receive first, second or third prizes or nothing, according to the deserts.



Plate Loaned by Rider and Driver

Evidences of the Enthusiastic Demonstration Accorded the Coach-and-Four of Alfred G. Vanderbilt Upon the Occasion of his First Arrival at Brighton from London.

RECEIVERS APPOINTED.

Yandell Haun and E. H. Nix have been appointed receivers for the Bodley Wagon Works of New South Memphis, Tenn., by Judge McCall, of the Federal Court. A general creditors' bill was filed by the Whitney National Bank, of New Orleans, which alleges that it holds notes of the company long past due, and that the total indebtedness amounts to about $46,000. The company denies that it is insolvent, but admits its inability at present to meet claims.

ANNUAL MEETING STOUGHTON WAGON CO.

The Stoughton Wagon Company, of Stoughton, Wis., held its annual meeting May 21. The following officers were chosen: President, Fritz Vea; vice-president, Henry Beattie; secretary, W. C. Hegelmeyer; treasurer, M. M. J. Vea. The company decided to equip the plant with a sprinkling system, also to make other improvements.

Digitized by Google

REGARDING THE CRATING OF VEHICLES.

By Travelling Correspondent.

Carriage crates and boxes have been constructed since carriages and wagons have been in use. But is has been only in recent years that men have devoted a special department to the planning and construction of crates for the transportation of vehicles. There was a period in the history of carriage and wagon building in which it was the practice to take all vehicles

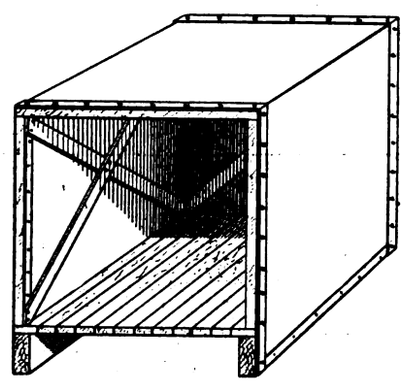


Fig. 1

almost completely apart and pack the parts separately. The wheels would go tied into sets, the body separate, and the shafts, springs and other parts arranged in individual packages. Then the uninitiated farmer or the stable boy of the rich man would undertake to set up and adjust the separate parts.

Almost always the matching was done incorrectly. Parts were improperly set. Axles would be adjusted at improper angles. Springs were insecurely set and all in all quite poor mechanical jobs resulted. The result has been the introduction of more crates and boxes for the forwarding of vehicles with parts assembled, so that the buyer need only open the door end of the crate or box and run the vehicle out. Then the shafts are adjusted and the vehicle is in readiness for service. No opportunity is given to get the wheels on wrong or make other errors. Of course, if the local builder handles carriages and wagons, and receives many of the parts separately packed or crated, he

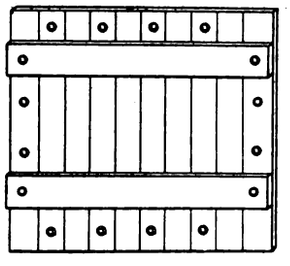


Fig. 2

has no difficulty in having the vehicles properly set up and put into a good running order, because he employs experienced men to do the work.

The average purchaser of a vehicle is not a man who has been trained in the mechanical art of setting up and adjusting the parts of vehicles, hence it is a great relief to him to have the vehicle, which he has probably selected from a catalogue, delivered at his home in a complete state, properly protected with crating or boxing material.

This is one reason for the increasing popularity of the shipping of complete vehicles. The vehicle receives ample protection when crated or boxed. If only covered with burlap, there is danger of the vehicle getting damaged. The heavier wagons are seldom crated, but are often slightly, but effectively, protected by wooden strips arranged along the exposed parts, the other portion being covered with burlap, canvas or oil cloth. It would not pay to crate or box the carriage or wagon for a short journey. If the vehicle can be run upon a flat car, and a tarpaulin placed over it, no damage will likely arise during the short trip.

We must bear in mind that manufacturers of vehicles in this country are constantly shipping vehicles to other lands; they are found in use in all parts of the world. During the past ten years the writer has been nearly all over the world, where the American carriage and wagon has been observed in use. To send a carriage to a foreign land, means that it should be protected for a sea trip, hence the necessity of the use of crates or boxes. It is astonishing to observe the number of carriage and wagon makers engaged in making crates and boxes for vehicles for long shipments.

In many cases high priced carriages, crates and boxes are often used in short journeys, which are returned. Some of the crates are built around the vehicles, and have to be broken off piece by piece. Some are constructed of odds and ends of stock at an expense of a few dollars, while others cost as much as fifty dollars, when properly built of selected stock. Almost any of the crate makers of a large city will charge you twenty-five to fifty dollars for a first class crate. The expense of the box type of crate is even more expensive, it depending upon the size.

Fig. 1 is a popular design of tight crate or box, made by crate makers for use in shipping vehicles long distances, with a view of utilizing the crate for a return trip. A crate of this sort will last a long time, and is necessarily weighty, often weighing as

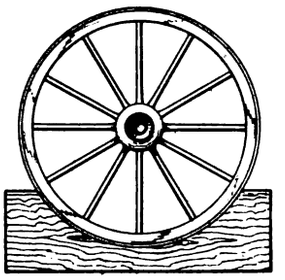


Fig. 3



Fig. 4

much as the lighter vehicles carried inside, but the vehicle incased therein is thoroughly protected. Common pine boards of five-eighths inch thickness are used on a frame of two by four-inch stock. The frame is first erected, it being properly braced with cross pieces as shown on inside view. After the boards are secured, the crate is further strengthened by thin wrought iron bands screwed to the edges. The door is then made according to plan shown in Fig. 2. The boards are evenly nailed on braces and the edges bored so that the lag screws can be inserted and secured to position.

The boards of box and door ought to be tongued and grooved together; if not, it will be necessary to tack a lining or tar paper inside to keep the interior free from dampness.

Some fixings are required inside the crate or box. Chucks like that shown in Fig. 3 are necessary; they form a bed for the wheels and assist in the steadying of the vehicle. In some cases additional precaution of steadying the wheels and axles is taken by putting in a brace, as shown in Fig. 4, which is made of hard wood, and lag-screwed to the base of the crate near the axle. The axle is gripped in the journal formed by the two blocks. There is need of soft pads in crating vehicles; these are made like a bag of burlap or canvas and stuffed with a soft material. By hanging them at corners where parts of the vehicle are liable to contact with the interior of crate, bruising of the paint work on the vehicle is prevented. Sometimes instead of this pad a cushion is made by winding fabric about a stick. This stick is fastened at the contacting points of the vehicle and the box acting as a cushion between the two, thereby breaking the jar.

There are also open crates constructed as well as closed crates. The open crate is far cheaper and lighter, but not so

Digitized by Google

effective in protecting the vehicle. Fig. 5 is a diagram of an open style. In order to get complete protection, these open crates are often lined inside with canvas, cloth or tar paper, as before mentioned. These open crates are usually framed together solidly; that is, without a door. Pine wood pieces four inches wide and one inch thick, planed smooth and even, make the best crating stock for the open style of crate. A crate for the average vehicle, made of this lumber and according to above

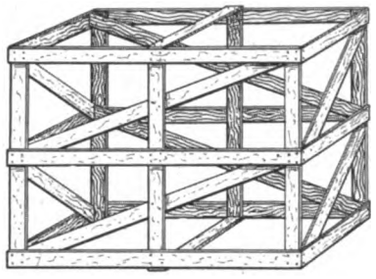


Fig. 5

plan, can be put together for a few dollars, not including expense of labor; but it cannot be utilized as often as the boarded type of crate. On the deck of a ship, sea water would impregnate the open crate and not the tight one. The open crate usually goes to the fire pile at the end of its trip, while the tight one has a market value and is treated as such when the journey terminates.

SKILLED LABOR IN CARRIAGE FACTORIES.

By J. F. Montague.

The conditions that confront skilled labor in some localities are frequently of a nature calculated to make the average carriage mechanic who has received proper training while learning his trade, and, afterwards, in following his calling in factories which are operated upon correct principles, think that surely one portion of the carriage world does not dream of the difficulties that beset, through lack of technical knowledge, many of its neighbors.

Possibly there are more complicated details connected with the management of a factory that manufactures a class of fine goods, which necessitate a process that calls for several distinct operations, through several departments, than exists in any other enterprise employing a like number of men.

The chief commodity that enters any factory which builds fine carriages is labor, other things being equal. It is the manner in which this plastic material is handled that spells success or failure. Negative success, which just keeps the pot boiling by spending the profits made while times are good, to bridge the dull seasons, is not considered here. But the success that follows an intelligent interpretation of the basic principles underlying the manufacturing of a particular line of fine carriages, and which returns an assured and generous profit on the capital invested.

To the man who may have spent years of his life in producing an article that he calls first-class, but which he sells for a fourth-class price, and to the individual who cannot recognize the relative value of manufactured goods, the comparison of cost between material and labor is more or less conjectured. In factories which have developed a system in which economy of effort and highest skill are combined, the one controlling thought of the management is to eliminate cost, but not at the expense of quality. Men are selected because they can show satisfactory results. It is no reflection upon the intelligence of a man who has not received proper training along certain lines that you refuse to employ him to fill a position that demands an intimate knowledge of the principles he is not familiar with.

Three elements enter into the construction of every manufactured article—labor, material and what is called general expense. Compared with the cost of labor, material occupies second place in all factories which manufacture fine carriages, and it is in the selection and management of this mercurical item of cost that the most serious thought and concern is given, that a working force may be provided and maintained that is reliable, one which can be depended upon to keep the factory running uniformly, steadily and economically. The most approved system has centered about the selection of the foreman.

Superintendents Must Choose Capable Foremen.

A competent superintendent will choose only those who have demonstrated that they are capable. Not only must the foreman have a thorough practical knowledge regarding the different processes each article is subjected to in his own department, but he should be familiar with the requirements of the other departments through which the parts must pass after leaving his hands, and see to it that the material shall reach them in proper condition in order that it may be operated upon immediately without loss of time in alterations and further preparation. Hundreds of dollars are sunk annually in many carriage factories by reason of overlooking this important requisite, and the cost is piled up and charged to the department in which valuable time is lost in attempting to remedy the mistakes.

It matters not how intelligent a foreman may be unless he has had proper training and instruction in his calling his attempts to direct the efforts of others will result in all sorts of complications, and almost invariably he will try to place the blame where it does not belong. In the vernacular of the mechanic, this sort of a foreman is not "on to his job," and no amount of bluffing or cajoling on his part will create anything but contempt for his methods and pretensions by the men under him. Work will be slurred and time and material wasted right under his nose. Very often such a man's head is full of ideas and more in process of incubation. Ideas, however bright and atractive to the chap who fathers them, when germinated in a brain devoid of exact knowledge upon any given subject, will separate large chunks of capital from the coffers of any business that gives them a job.

There is no calling or profession in the world which produces so many fakers as the field of carriage building. And the most fertile department in this industry in creating them is the wood shop, and right there is where the stamp of mediocrity once placed can never be obliterated. No matter how skillful the the men in the other departments may be, the earmarks of the unskilled woodworker will proclaim themselves on the finished vehicle.

Being "on to his job" is the first requisite of the foreman. Another indispensible quality he should possess, and without which he cannot hope to make good, is his ability to inject the personal element into all his dealings with the workmen. To both the men and his employers he must be absolutely fair, square and honest. Unless labor is trained properly, cost out of all proportion to results secured will embarrass the business, and misunderstandings will creep in. Even when the workmen are skilled in their several branches, unless displayed to the best advantages and moulded to fit local conditions in the particular factory in which they are employed, the trouble in a less degree will manifest itself.

To reduce cost and keep the work up to a given standard, it is absolutely necessary that there should be some one controlling spirit, some master mind whose training and mental qualifications has fitted him to assemble and guide his force of workmen in a manner that will secure best results with the least possible friction. It is his duty to keep the several departments in line, and direct their scattered energies to one objective point.

INSTRUCTOR RETIRES TO THE WOODS.

Instructor Andrew F. Johnson, of the Carriage Technical School, left on May 21 for Gray, Me., where he usually spends the summer months. The Correspondence Class, which is conducted the year round, will receive its customary attention by him from his rustic quarters. We extend to Mr. Johnson our wishes for a pleasant sojourn.

Digitized by Google

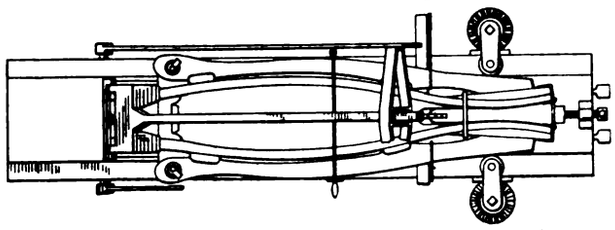
Recently Granted Carriage Patents

Space will not permit us to illustrate all new patents pertaining to the vehicle industry issued by the Patent Office. We therefore select those that we consider of the greatest interest to our readers.

Shaft-Bending Machine. Paschal P. Dyke, of Sidney, Ohio. No. 886,359. Patented May 5, 1908.

This invention relates to improvements in shaft bending machines, and has especial reference to the construction of the clamp devices which are applied to the outer portions of the shafts in order to cause the same to contact closely with the former or formers employed for giving the shaft the proper curvature in different portions of its length.

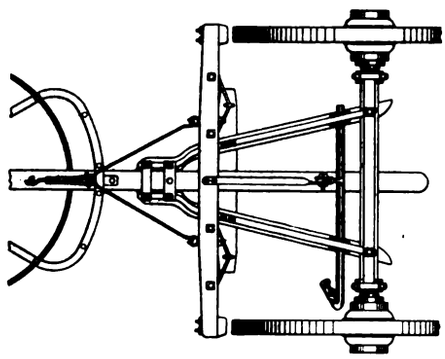
The patentee contemplates the provision of a clamping construction pivotally mounted, its pivot being preferably arranged



so that the clamp may be set at a greater or less distance from the outer face of the shaft, said clamp extending practically from one end of said shaft to the other, and being applied throughout the length thereof to give the same the proper curvature as determined by the shape of the former or formers applied to the inner face of the shaft. Our illustration is a plan view of the improved clamping devices in place, two shafts being formed simultaneously.

Details of the construction showing the manner of operating are outlined conventionally in the drawings, but inasmuch as they relate to the operation of the machine in parts which are not new and which form no feature of this invention, they are not herein specifically described, the intention being only to describe enough of the mechanism to make clear the manner of operation of these improved clamping devices. The idea of providing formers to lie between two shafts and of applying power to the outer faces of the said shafts to compel them to conform in outline to the former, is not new, and is not claimed herein. It is seen, therefore, that the novelty herein claimed resides in the provision of one side clamping member for each shaft and the devices for bringing this into contact with the shaft at appropriate points.

Brake. Simons E. Chidister, of Ramah, Colo., assignor of one-third to B. H. Givans, of Packwood, Ia. No. 886,944. Patented May 5, 1908.



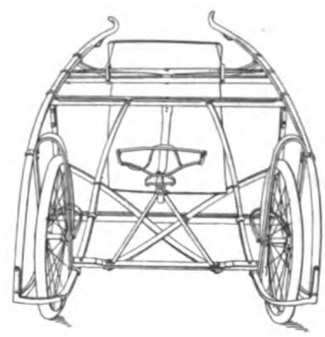
This invention relates to improvements in vehicle brakes, and has for its objects the provision of means for partly or entirely preventing the rotary movement of one or more of the traction wheels of a vehicle, and the improvement of the construction of a brake device which comprises a minimum number of parts, which is simple and comparatively inexpensive to construct, and is efficient in operation.

In the drawing the figure is an inverted plan view of a device or apparatus constructed in accordance with the present invention.

A transverse brake beam or bar slidably engages, preferably, the coupling pole and is supported in engagement with said pole through the medium of a cross-piece or auxiliary bar, which bar is connected to the brake beam or bar through the medium of substantially V-shaped hangers or brackets. Each of these brackets has its upper portion connected by an eye-bolt to the auxiliary beam or cross-piece near one end, and the lower ends of said bracket are connected to the brake-beam or bar. It will be noted that a pair of these V-shaped brackets are employed, and by means thereof the brake beam or bar is slidably suspended upon the coupling pole. Near the ends of the brake beam or bar are shoes which are adapted to engage the tread or tire of the traction wheels.

Speeding-Cart. Merton E. Smith, of Bronson, Mich. No. 887,133. Patented May 12, 1908.

This invention relates to speed carts or sulkies and has for its object to provide a strong, durable and thoroughly efficient

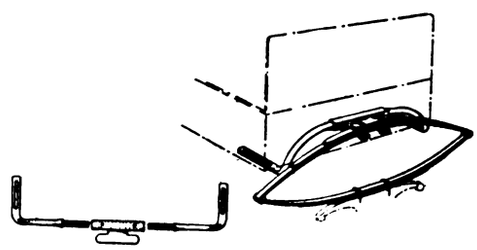


cart of this character especially designed for use by horse trainers and other persons for speeding and breaking horses.

A further object of the invention is to provide a cart or sulky the guiding forks of which are connected by a rod or bar independent of the supporting frame so that should either wheel strike an obstruction or receive a jolt the other wheel will be correspondingly affected, and further to provide a sulky in which the usual transverse axle is dispensed with, the entire weight of the vehicle being suspended from and supported by the wheel hubs.

A still further object of the invention is to generally improve this class of devices so as to increase their utility, durability and efficiency.

Body Loop or Hanger. Charles Druck, of Shawano, Wis. No. 887,606. Patented May 12, 1908.



This invention relates to the art of carriage or wagon construction, and has particular reference to means for supporting

Digitized by Google

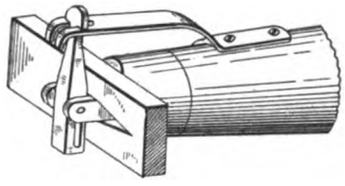
the body of such vehicles upon the running gear through the agency of suitable body loops or hangers.

The primary object resides in a simplified arrangement of an adjustable body loop and its correlative attachments, in the facility with which the parts may be assembled, in the consequent reduction in cost of construction, and the general efficiency incident to such arrangement and combination of parts.

One of the claims is the combination with a vehicle body and a spring, of an attaching plate secured to said spring, a coupling carried by said plate, hanger sections adjustably mounted in said coupling and attached to the body, and means for locking said sections in their adjusted position.

Trace-Securing Means for Singletrees. Thomas Morcom, of Graham, N. C. No. 887,685. Patented May 12, 1908.

Ordinary means for detachably securing the ends of traces upon the ends of singletree for a vehicle, frequently fail to



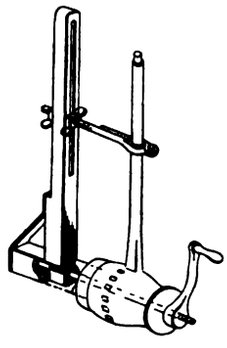
retain the traces thereon, and a serious accident is liable to occur on account of an improper release of the trace or traces while the vehicle is in rapid motion.

The object of the invention is to provide novel details of construction for a device of the character indicated, which will in a convenient manner secure traces on the ends of a singletree, and permit a release of the traces quickly, their accidental displacement being impossible unless the parts are broken.

It will be obvious from the illustration and foregoing description of this improved trace holding device that it is simple, durable, easily operated and will positively prevent an accidental detachment of traces from a singletree.

Spoke Setter and Guide. Josephus Hanon, of Near Dearborn, Mo. No. 888,010. Patented May 19, 1908.

This invention provides novel means for holding a hub and spokes in the construction of a wheel and when assembling the

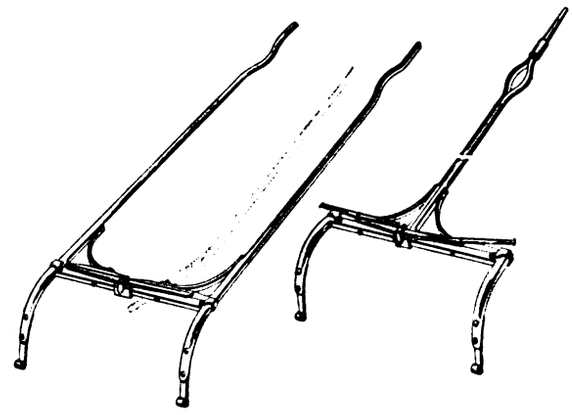


parts, the purpose being to insure accurate position of the spokes with reference to the dish and the distance of the outer ends of the spokes from the hub, thereby facilitating the placing of the rim in position after the spokes have been set into the hub.

The device comprises a frame-work which consists of a bar and a cross-head, the latter being secured at an intermediate point to an end of the bar in any substantial manner as by means of a mortise and tenon joint. A brace connects one end of the cross-head with the bar. A spindle projects from the opposite end of the cross-head in line therewith and is tapered and adapted to receive the hub into which the spokes are to be set. The brace is arranged on that side of the bar opposite the side from which the spinde projects, so as to sustain the weight and the force of the blows delivered upon the ends of the spokes to drive the same into the hub. A rod passes through the spindle and cross-head and one end is headed to overlap the brace and secure the same to the cross-head, the opposite end of the rod projecting beyond the spindle and being threaded to receive a washer and a hand-nut.

Combined Pole and Shaft for Vehicles. Aaron J. Martin, of Toledo, O., assignor of one-half to Charles C. Miller. No. 888,025. Patented May 19, 1908.

This invention pertains to an improved shaft attachment for vehicles, whereby the same device may be adjusted and arranged



for use with a double or single team as may be desired, and the improvement consists in providing means for rigidly holding the parts after they have been adjusted for use, either as a pole or shafts.

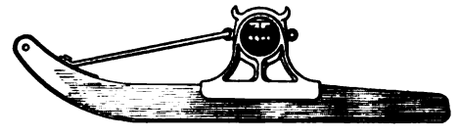
On the cross-bar is pivoted the whiffletree or the double-tree. The pole members are divided longitudinally and when the device is to be used as a pole these members are brought into the position illustrated, and when so used the thimble is attached to the outer ends of the pole members by means of suitable screw threads formed upon the pole members and the inner periphery of the thimble.

When the device is used for one horse the lateral bars, which are pivoted to the cross bar about midway between their ends and the pole members, will meet or practically meet at their inner ends and the divided pole members, which constitute the shafts when brought into that position, will be in proper alinement with the arms and the thill iron. The pole members are properly braced as between said pole members and the cross-bars by means of braces, which braces are connected in the usual manner to serve to brace the pole members whether they are used as a pole or shafts.

Sleigh-Knee. John A. Heintz, of Menominie, Wis. No. 888,168. Patented May 19, 1908.

This invention relates more particularly to sleigh knees, and the means for connecting the same to the cross bar of the body frame.

The principal object is to provide a novel and simple connection which will permit the necessary play of the runner when



passing over uneven surfaces without straining the parts, said connection being strong and effective, and comprising parts not liable to injury or derangement, said parts furthermore being readily detachable to permit the dismemberment of the structure. The illustration is a side elevation of a runner showing the improved knee structure applied thereto.

It will be apparent that with this structure the runners and knee bracket can rotate freely on the journal and with respect to the cross bar, so that said runner can pass over uneven surfaces without placing the strain upon the parts. The greater part of the wear is brought upon the wear section. This portion may be replaced when worn without the necessity of an entirely new structure. To remove the runner and knee bracket

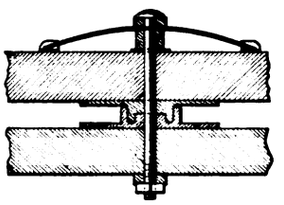
Digitized by Google

from the cross bar, it is only necessary to detach the bolt, whereupon the bearing with the wear and journal sections can be slipped from the end of said cross bar. With the cross bar removed, it will be apparent that the journal sections can be brought together, thereby displacing the rib portions from the groove and permitting the detachment of said sections. To assemble the parts, it is only necessary to reverse the above described operation.

Anti-Rattler for Singletrees. William Mehn, of Corydon, Ky. No. 888,183. Patented May 19, 1908.

The invention relates to improvements in anti-rattlers for singletrees.

The object of the present invention is to improve the construction of anti-rattler devices for singletrees, and to provide



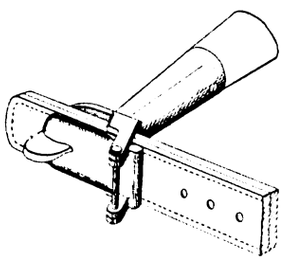
a simple, strong and durable device, designed for use on various kinds of one-horse vehicles, and adapted to permit the whiffletree to be screwed tightly against the cross bar of a pair of shafts, and capable, as the bearing or wear plates become worn, of automatically taking up the wear and of holding the singletree firmly against the cross bar, whereby the singletree is prevented from rattling.

A spring of any desired size and strength may be employed to suit the character of the vehicle on which it is to be used. The bolt, when screwed tight, presses the collar or sleeve down on the singletree and thus snugly holds it to the cross bar, while the spring bearing against the brace prevents the parts from rattling when wear takes place. By this arrangement, the nut of the bolt may be screwed as tight as desired without affecting the operation of the spring.

Singletree Attachment. Samuel D. Riegel, of Experiment, Ga., assignor of one-half to Jesse C. Turnipseed, of Griffin, Ga. No. 888,194. Patented May 19, 1908.

This invention relates to a singletree attachment whereby the traces of a harness can be readily attached to or detached from the singletree and firmly held in position.

The invention has for its objects to improve and simplify the construction and operation of devices of this character, so as to



be comparatively easy and inexpensive to manufacture, thoroughly reliable and efficient in use and having its parts so arranged as to permit a trace to be conveniently and quickly attached or detached, and to provide a trace holding device for singletrees in which the parts are so arranged that the holding effect becomes greater as the draft on the trace increases.

The device comprises a head formed integral with a sleeve whereby a ferrule-like body is presented, the sleeve portion having an aperture for the reception of a screw, as shown, whereby the device is rigidly secured to the singletree. Extending outwardly from the flat surface of the head are spaced lugs formed integral therewith and having their outer ends rounded so as to freely receive the trace. In the present instance, three such lugs are shown and the trace has groups of horizontally extending transverse apertures for permitting the trace to be adjustably secured to the device; in other words, the trace can be lengthened or shortened by inserting the lugs into any one of the groups of openings.

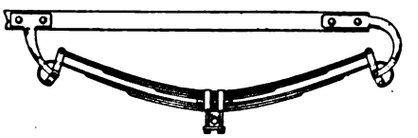
Vehicle Spring. Michael M. McIntyre, of Cleveland, O., assignor to the Perfection Spring Company, of same place. No. 888,347. Patented May 19, 1908.

This invention relates to vehicle springs, and has for its object to provide a spring composed of two or more individual members and to so unite, construct and support said members as to permit easy and free relative movement of the ends of the spring members as well as bodily longitudinal movement of the said members relatively to their support without impairing the physical properties of said members.

The accompanying drawing represents a side elevation of one form of spring constructed in accordance with this invention.

The upper or "carrier" spring member is provided at each end with an eye embracing a pin carried by a shackle comprising the double links, the lower ends of which are pivotally connected to an outrider or hanger.

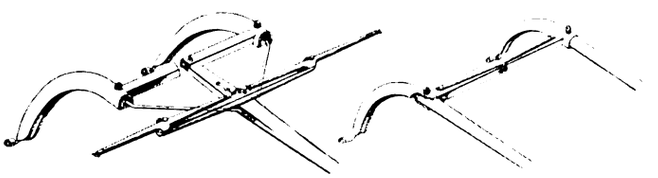
The lower or "passenger" spring member is provided with long flexible ends terminating in scrolls, the ends of which are within or toward the axle with respect to the bodies of the scrolls are connected to the pins of shackles comprising the



side links, by eyes. The upper ends of the links may be pivoted to the bolt or pin which is carried by one of the hangers and supports the lower ends of the shackle links. As will appear from illustration which represents the positions of the parts with no load on the vehicle, the lower ends of the short shackles or links are slightly outside of vertical lines extending downwardly from the pins or bolts. Under load, the lower ends of the scrolls move inwardly until the lower ends of the links or shackles are substantially in a vertical line drawn from the pivot pin or bolt. Meanwhile the elongation of the spring member under load will move the upper ends of the shackles comprising the links into the same vertical line with the pin and lower end of scroll.

Combined Shaft and Pole for Vehicles. Charles Acker and George R. Glossop, of Rushville, Ill. No. 888,379. Patented May 19, 1908.

This invention relates to improvements in combined shafts and poles for vehicles. Its objects are, primarily, to provide for the ready conversion of the device for use as shafts for a single horse or as a pole for a team of horses; to simplify con-



struction and promote economy of manufacture; and to carry out these ends in an expeditious and effective manner.

In carrying out the invention a preferably metallic member is provided, constituting the salient feature thereof and which consists of two preferably curved metallic arms, effective for attachment to a vehicle front-axle, and of a cross-bar integral with said arms. Said arms and cross-bar are preferably of shell-like or hollow construction for lightness, in addition to aid in serving as sockets for a purpose presently disclosed. Said lateral or arm members have suitably secured or fixed within their upper or receiving ends bent spring-metal tongues or clasps offset at their free ends from the inner upper surfaces of said arms, whereby are formed sockets for readily receiving

Digitized by Google

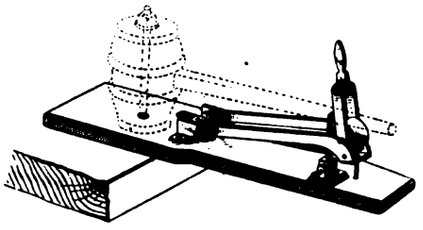
the inner end-portions of the shafts or thills when it may be desired to use the same, as for single horse or animal. Said tongues or clasps and the opposed portions of said arms are provided with coinciding apertures for receiving preferably screw-threaded pins or bolts. Said tongue-like clasps by reason of their spring-action, will, as they are forced downward in effecting the insertion of the shaft-member ends into the sockets in the arms again spring to their normal positions and thus exert a clasping or clamping action upon said shaft-members.

Within the cross-bar, centrally thereof, is also provided a socket, opening out through the forward side thereof, the same being preferably formed of an upper, and a lower plate soldered or brazed to opposed surfaces or portions of said cross-bar and having openings there through registering with each other and with the openings in the upper surface of said cross-bar. This in intended for the insertion of the pole for two horses. Means for the attachment of a single or whiffletree to said cross-bar member is also provided by the employment of a preterably screw-threaded pin or bolt inserted through an aperture produced in said cross-bar about at its center, and through said whiffletree.

Spoke-Setting Machine. Ed. E. Foxworthy, of Humansville, Mo., assignor of one-half to And. J. Stufflebam, of same place. No. 888,394. Patented May 19, 1908.

This invention relates to an improvement in spoke setters, and the object of the invention is the provision of a simple, economical and efficient device of this character which can be readily and quickly adjusted for use in connection with wheels of various sizes and by means of which the spokes of a wheel may be quickly and properly positioned in the hub preparatory to being driven home.

In the operation of the device a gage bar is first adjusted to the desired height; the operating lever being in its lowered posi-



tion. The spoke is then inserted in the proper opening in the hub; the operating lever is then raised and moved to the limit of its movement, which causes the roller to engage the spoke and move the same up into contact with the laterally extending portion of the gage bar, the parts being held in this position by the spring. The spoke is then driven home, the operating lever lowered, and the hub of the wheel moved on the mandrel to the proper positioin to receive another spoke, when the operation is repeated. Inasmuch as the operating lever when raised is moved forwardly beyond a vertical, it will be apparent that the spring will hold the same firmly against accidental displacement, as when it is desired to lower the same, it must be first moved rearwardly until beyond a vertical against the tension of said spring.

RECENTLY GRANTED PATENTS OF INTEREST TO THE VEHICLE TRADE.

885,659—Hanger for Vehicle Bodies. J. G. Anderson, Rockhill, S. C.
885,445—Spoke-Puller. J. R. Crenshaw, Newborn, Ga.
885,030—Wheel Guard. W. R. Evans, Youngstown, Ohio.
885,036—Wheel Lock. W. H. Gibson, Grand Rapids, Mich.
12,780—Brake-Setting Device. Reissue. E. Godley, Springfield, Ill.
885,342—Spring Wheel. H. E. Heaton, Oroville, Cal.
885,502—Buggy Spindle. J. C. Messer, assignor of two-thirds to R. C. Lambie and J. Cook, Austin, Texas.
885,169—Pneumatic Brake. W. H. Miller, Cleveland, Ohio.
885,176—Combined Lock and Latch for Vehicle Doors. F. P. Pfleghar, assignor to English & Mersick Co., New Haven, Conn.
885,646—Vehicle Tire. M. B. Priest, Milwaukee, Wis., assignor to Priest Tire Company.
885,518—Whiffletree Hook. J. H. Rabe, St. Louis, Mo.
885,414—Brake Shoe. E. S. Woods, Chicago, Ill.
885,744—Carriage Body. N. Gilbert, Alexandria, Ont., Canada.
885,749—Wagon Brake. J. F. Hagler, Shenandoah, Iowa.
885,845—Vehicle Suspension. R. G. Handy, Bay City, Mich.
886,222—Removable Support for Vehicle Curtains. H. S. Koiner and S. Botteese, Washington, D. C.
885,888—Concave Vehicle Tire. A. G. Thompson, San Francisco, Cal.
886,785—Buggy Top Support. J. Elms, Comanche, Texas.
886,967—Vehicle Spring. A. Fortner, St. Elmo, Ill.
886,828—Vehicle Brake. D. T. Lohnes, Omaha, Neb.
886,617—Vehicle Shock-Absorbing Apparatus. R. M. Lovejoy, Meredith, N. H.
886,715—Spoke Socket. N. W. May, Little Springs, assignor of one-half to J. M. May, Brookhaven, Miss.
886,429—Vehicle Spring. F. R. Skidmore, Milwaukee, Wis.
886,734—Wagon or Truck. A. Smith, assignor to Bergen Point Iron Works, New York, N. Y.
886,659—Vehicle Canopy Top. J. H. Sprague, Norwalk, Ohio.
886,895—Attachment for Sulkies and Gang-Plows. J. T. Toland, Atwater, Minn.
886,563—Detachable Sleigh Runner. B. White, Conde, S. D.
886,565—Metal Wheel. W. E. Williams and J. Grant, assignors to Auto Machine Works Company, Chicago, Ill.
887,567—Flexible Metallic Vehicle Wheel. G. Auberlin, U. S. Navy.
887,195—Truck. O. C. Hopkins, Mount Sterling, N. C.
887,649—Wheel. J. Kennedy, Pittsburg, Pa.
887,100—Jointed Wheel Tread. L. T. Knowles, Minneapolis, Minn.
887,404—Dump Wagon. H. F. Langreder, Chicago, Ill.
887,258—Fixture for Wagon Racks and Boxes. W. Louden, Fairfield, Iowa.
887,684—Vehicle Wheel Tire. H. H. Moore, Paris, France.
887,225—Dump Wagon. G. A. Post, Chicago, Ill.
887,133—Speeding Cart. M. E. Smith, Bronson, Mich.
887,283—Automatic Vehicle Brake. J. Stevens, Washington, D. C.
887,551—Vehicle Brake. H. M. Vanderbilt, Suffern, N. Y.
887,562—Vehicle Wheel. M. L. Williams, South Bend, Ind.
888,379—Combined Shaft and Pole for Vehicles. C. Acker and G. R. Glossop, Rushville, Ill.
888,302—Wheel Tire. F. N. Boughn, Riverside, Cal.
887,997—Vehicle Tire. E. B. Cadwell, Detroit, Mich., assignor of two-thirds to F. Johnston and F. M. Ashley.
888,322—Lubricating Device for Axles—M. H. Elliott, Dial, Ala.
888,394—Spoke Setting Machine. E. E. Foxworthy, assignor of one-half to A. J. Stufflebam, Humansville, Mo.
889,794—Dumping Wagon. C. M. Haeske, South Bend, Ind.
888,010—Spoke Setter and Guide. J. Hanon, Near Dearborn, Mo.
888,168—Sleigh Knee. J. A. Heintz, Menominie, Wis.
888,023—Wheel Hub. H. J. Lawrence, Longbeach, Cal.
888,025—Combined Pole and Shaft for Vehicles. A. J. Martin, assignor of one-half to C. C. Miller, Toledo, Ohio.
888,347—Vehicle Spring. M. M. McIntyre, assignor to Perfection Spring Company, Cleveland, Ohio.
888,183—Anti-Rattler for Singletrees. W. Mehn, Corydon, Ky.
888,251—Tongue Truck. W. Mohr, Oklahoma, Okla.
888,116—Running Gear for Vehicles. F. R. Owens, Bureau, Ill.
888,194—Singletree Attachment. S. D. Riegel, Experiment, assignor of one-half to J. C. Turnipseed, Griffin, Ga.
887,848—Cast-Iron Axle. E. R. Robinson, Chicago, Ill.
887,967—Auxiliary Seat for Vehicles. H. A. Schermerhorn, Shabbona Grove, Ill.
887,973—Tire Setting Machine. M. Smith and G. A. Seyffert, Lamar, Mo.
888,269—Cushion Tire for Road Vehicle Wheels. J. Stevens, London, Eng.
888,270—Wagon Brake. A. J. Strunk, Bunch, Iowa.
888,286—End-Gate for Wagons. B. M. Wilhite, Gordon, Neb.
887,888—Carriage Cushioning Device. M. Wolf, New York, N. Y.
888,214—Tire for the Wheels of road Vehicles. J. V. F. A. Yberty and E. P. Merigoux, Royat-les-Bains, France.

Copies of above patents may be obtained for fifteen cents each, by addressing John A. Saul, solicitor of patents, Fendall Building, Washington, D. C.

RECENTLY EXPIRED PATENTS OF INTEREST TO THE VEHICLE TRADE.

Patents Expired April 14, 1908.

450,166—Two-Wheeled Vehicle. H. H. Lockwood, Olean, N. Y.
450,167—Vehicle Shafts. H. H. Lockwood, Olean, N. Y.
450,363—Spring Gear for Vehicles. F. Coleman, Ilion, N. Y.
450,414—Two-Wheeled Vehicle. D. N. Kratzer, Marion, Ia.
450,418—Thill Coupling. W. C. Moler, Claggett's Station, Md.
450,438—Vehicle Hub and Axle. I. M. Warner, Bronson, Mich.
450,446—Back for Vehicle Seats. T. S. Brown, Poughkeepsie, N. Y.

Patents Expired April 21, 1908.

450,645—Two-Wheeled Vehicle. W. B. Stover, South Bend, Ind.
450,704—Vehicle Spring. W. T. Sample, Greenville, Pa.
450,816—Rubber Tire for Vehicle Wheels. A. H. Overman, Springfield, Mass.
450,911—Fifth Wheel for Vehicles. A. W. Johnson, New Brunswick, N. J.
450,952—Tire for Vehicle Wheels. P. W. Tillinghast, Providence, R. I.

Patents Expired April 28, 1908.

451,013—Wheel Felloe. J. H. Ball, Lewisham, England.
451,014—Vehicle Shaft. G. E. Banfield, Toronto, Canada.
451,021—Vehicle Running Gear. J. J. Black, Cleveland, Ohio.
451,029—Two-Wheeled Vehicle. G. M. Cox, Mansfield, Ohio.
451,144—Vehicle Running Gear. C. A. Vincent, Paris, France.

Patents Expired May 5, 1908.

451,524—Running Gear for Road Wagons. C. W. Saladee, Cleveland, Ohio.
451,525—Running Gear for Road Wagons. C. W. Saladee, Cleveland, Ohio.
451,671—Road Cart. N. H. Hill, Armada, Mich.
451,687—Fifth Wheel. J. J. Black, Cleveland, Ohio.
451,825—Dumping Wagon. J. M. Kimball, Woodstock, Ill.

The above list of patents of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City.

Digitized by Google

SIDE TALKS FOR FOREMEN.

Foreman Jeffrey was leaning against a post on the sunny side of the building, looking straight ahead and apparently seeing nothing, but evidently, from his appearance, his mind was concentrated on something rather disagreeable, and he couldn't see light through it.

On being asked if he were day-dreaming he said, no, that he thought it was more of a mental nightmare than a dream. And then he said that the thing that was troubling him was that his Boss, the proprietor, had been meddling around among his men, countermanding his orders here and there, and when he, the foreman, found it out he was so furious that his first inclination was to walk up to the office and quit. He was standing, however, debating it out with himself, or rather stewing and steaming over the problem of the imaginary insult, rather than the injury, that had been done him by the Boss, writes T. J. Conroy in The Woodworker.

After giving him time to ease his mind by recounting in detail what had happened, I asked if he really thought the Boss did those things with the intention of insulting him. At first he said that it looked that way, but after he had cooled off awhile he admitted that whatever insult there was, was passive rather than active, that the Boss had no intention of doing him harm at all, but had rather been intent on getting certain things done certain ways, and instead of hunting up the foreman, had simply instructed the men.

"'Now look here," I said; "your boss has got lots of things to think about besides your dignity and the danger of insulting it, and, anyway, there is more dignity in your not getting offended at such things than there is in going off to one side and swelling up, or going up to the Boss and threatening to leave. You must remember that he has some rights, has the right to give you or anybody under you orders any day, and it is by courtesy that he generally leaves you to give the orders, and you get your instructions from him. So, while you may feel like he walked over your dignity, there is nothing going to happen to your dignity unless you make it happen yourself by your own actions. The chances are, too, that if you will wait there will be some explanation; and, anyway, if there isn't, you should wait until you can talk respectfully to your employer before going and asking him anything about it. And if I were you, if the Boss didn't say anything about it, I wouldn't either except that it be necessary for your own future guidance in the work."

It so happened, though, that the Boss did say something about it. He came along while we were still talking, and stopped and said: "By the way, Jeffrey, I owe you an apology for butting in and changing your orders this morning, but it was very important, and I came along in a big rush and didn't see you, so I instructed the men to change their work in accordance with new requirements that had developed. If you will come on up to the office now, I will explain it to you, so that you will see and can give out the work properly." After that the Boss and the foreman went back toward the office. The foreman had the old, bright look in his face, and I was left to speculate on what little things it takes sometimes to make a big cloud in a man's face, and what little excuse there is for lots of our worries, if we would but look into them before we do the worrying.

LAWSON VARNISHES.

These varnishes are one of the products of the Valentine factories, and are compounded, blended, ripened and distributed with the same exactitude that has always been a characteristic of the Valentine varnishes themselves.

They are made to serve trade conditions that demand such a product as they stand for, and the sales are the best testimony to the exactness with which the varnishes have met the demand.

Varnish is an article on which so much depends that as much insurance as possible should be secured in its use. The tried brands must therefore be the true brands.

MOTOR CARS AND HORSES.

The automobile has not had any adverse effect on the demand for horses, says E. R. Thomas, president of the E. R. Thomas Motor Co.; in fact, he says, there has been a steady growth in the number of animals sold each year since the coming of electric cars and the automobile.

"Europe and other countries require the best quality of American horses, and this has been the steady means of improvement in the horse of this country.

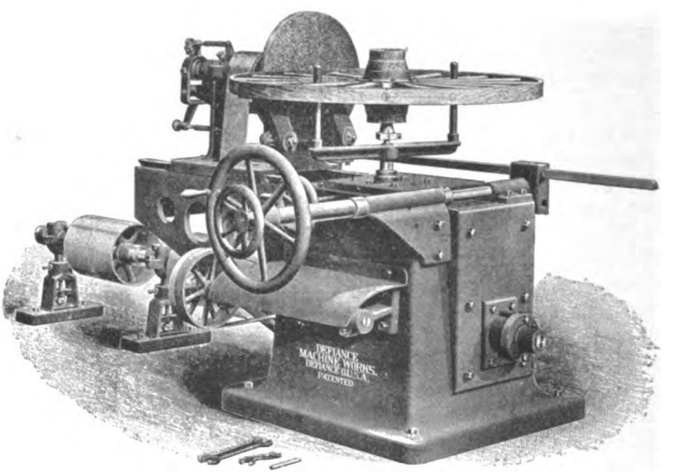
"Last year,' continued Mr. Thomas, "the market prices for horses were very high, especially in the first ten months of the year. The greatest advance was made in draft horses, one consignment—21 of these animals—selling for the record price of $422 at auction in the regular market.

"In the six principal western markets there was a shortage in the first ten months of 1907 of more than 50,000 head, Chicago alone being shy more than 16,000. The deficiency for the whole year was nearly 85,000.

"There is no doubt that the general decline in the marketing of horses has been due to the fact that the number of marketable ones has fallen off because of a feeling on the part of the farmers and others who have raised horses in the past that the automobile would decrease the demand for man's most faithful and useful friend, or, at any rate, lower the price of them so as to make the breeding of them less profitable."

WHEEL TREAD SANDING MACHINE.

This engraving represents a vehicle wheel tread sanding machine which is used by the makers of vehicle wheels, for rapidly and accurately dressing the tread of the wheel's felloe to the exact diameter and finish it ready for the tire. It will finish about six hundred medium sized wheels in ten hours and larger ones in proportion, accomodating from the smallest to the largest diameters with various widths of felloes, and it can be



successfully handled by unskilled labor. The manufacturers of this machine are The Defiance Machine Works, Defiance, Ohio.

The wheel to be finished is placed upon a revolving cone center provided with suitable driving arms to rotate the wheel. The wheel's felloe next to the sand disc rests upon a table. The wheel is then brought in contact with the disc by a slight turn of the large hand wheel shown. The work is finished smooth and true by a single rotation of the wheel and entirely free from hand labor, which effects a large saving in time and greatly improves the quality of the work.

The sandpaper disc rotates upon a heavy steel arbor running in long self-lubricating bearings so enclosed to exclude dust or dirt. The sandpaper covers either side of the disc so that both sides can be used by reversing.

Digitized by Google

OBITUARY

Charles H. Gillespie.

Charles H. Gillespie, one of the oldest and best known men in the varnish trade, and president of Chas. H. Gillespie & Sons, varnish makers of Jersey City, N. J., died recently. Mr. Gillespie was born in Troy, N. Y., in 1832, where he resided for several years. There he first became acquainted with the details of the varnish business, his father, Charles Gillespie, having established a varnish factory in that city in 1824. When deceased was sixteen years of age he was taken into the business, and under the tuition of his father he soon became familiar with all branches of varnish making.

In 1847 the plant was moved to Brooklyn. The elder Gillespie continued to manage the business until 1854, at which time he retired and Chas. H. Gillespie took full charge. A few years later he decided to move the factory and office to New York, and located in West Twenty-fifth street, where he conducted the business of varnish manufacturing alone until 1864, when he formed a partnership with Isaac Parker, they remaining together as Parker & Gillespie until January, 1879, when the firm was dissolved through the death of Mr. Parker.

Fifteen years ago still another change was made in the firm's personel, and at the same time the factory was moved to Jersey City. Mr. Gillespie then admitted his sons into the business, but he continued in active control of the firm as president until he retired three years ago. Since then the business has been carried on by his sons.

Mr. Gillespie was a resident of East Orange, N. J., for more than forty years, and was prominently identified with the development of that town. He was a charter member of Hope Lodge, No. 124, F. A. M., of which he was the oldest and last surviving member. He was also a member of the Paint, Oil and Varnish Club of New York. During the past fifteen years the deceased was accustomed to divide his time between New York and the South in the winter, and at his cottage at Belmar, N. J., in the summer. It was while at Palm Beach, Fla., in the early part of this year that he was taken ill. He became more seriously afflicted while in Atlantic City, and on April 10th was taken to the Hotel Albert, New York City, where he died on April 28th.

Mr. Gillespie is survived by a widow and two sons, Mr. Louis C. Gillespie and Alanson S. Gillespie, who will continue the business of the company.

Joseph Niehaus.

Joseph Niehaus, until recently interested in the Continental Carriage Co., of Cincinnati, O., died of heart disease on May 18th, at his residence in Walnut Hills, a suburb of Cincinnati, at the age of forty-nine years.

Mr. Niehaus was born in 1859, spending his boyhood days in the Queen City, receiving his early education at the St. Xavier College of that city. He completed his studies at the Georgetown University, Washington, D. C. He returned to Cincinnati at the age of nineteen years, and became associated with his father in the brewing business, at which he continued until 1887. He then entered the banking and steamship passenger business, at which he remained for two years.

In 1889 he became president of the National Hardware Company, continuing so until 1893, when he retired and became interested in the firm of William Aufderheider & Company, manufacturers of vehicles, of Cincinnati. In 1897 the firm name was changed to Continental Carriage Company. On account of serious illness about two years ago, Mr. Niehaus sold out his interest in the carriage business. Later he purchased a sponge business, giving his personal attention to it until a few weeks ago, when sickness confined him to his house. He is survived by a widow and two sons.

In his business relations the deceased was ever found very courteous and agreeable, and honorable and upright in all his dealings. He will be missed in his home and among a large circle of friends and business acquaintances.

SPECIAL AUTOMOBILE HARDWARE AND TRIMMING CATALOGUE.

A special catalogue of automobile hardware and trimmings has recently emanated from the old reliable supply house of John A. Gifford & Son. 25 Park place and 22 Murray street, New York. This catalogue is replete with illustrations of accessories of the automobile; it contains cuts, with prices, of door hinges, locks and handles, bow sockets, slat irons and all parts necessary in the construction of tops. Lifting jacks, curtain fasteners in all styles, snap loops, strap buckles, sash lifts, window anti-rattlers; foot and robe rails are also shown among the many useful articles, which are often in demand in the carriage and wagon shop, as well as in the garage. If you are interested in these things, a copy will be sent to you for the asking.

STORY OF THE GREAT ARROW CAR.

The George N. Pierce Company, manufacturers of the well-known Great Arrow motor car, have published and forwarded to owners of their cars and others interested in their construction, a book which must be a masterpiece of the printers' art, for it surely cannot be excelled in the exquisite taste and skillful manner in which it has been produced. It is 10 in. by 12 in. in size, and contains seventy-two pages of descriptive matter, each page containing one or more half-tone plates of views of various departments of the great plant.

Among the illustrations of the latest designs, in the rear of the book, are two pages devoted to the evolution of the Great Arrow car, in ten plates. The pioneer is the 2¾ horsepower motorette, made in 1901, and from this the development is shown from year to year until the present stage of automobile manufacture has been reached.

Many evidences of the success of the product of the George N. Pierce Co. is shown in the form of reproductions of certificates, testimonials and trophies won at various endurance, touring and non-stop contests. It is a handsome book, one that will, no doubt, find a place in the library of every recipient.



Miniature Half-tone illustration of the Cover of the Beautiful Farm Wagon Catalogue of the Milburn Wagon Co., Toledo, Ohio.

Digitized by Google

News of the Trade

NEW FIRMS AND INCORPORATIONS.

The M. G. Newell Co., of Greensboro, N. C., has been organized to do a general mercantile business, particularly dealing in buggies, carriages, wagons and other vehicles, harness and all vehicle accessories. The capital is $10,000, and the company is composed of M. G. Newell, C. C. Graves, D. B. McRary, T. J. Redding, R. G. Campbell and J. R. Coble.

J. J. Carney Manufacturing Company has been organized at Kittery, Me., for the purpose of manufacturing and dealing in carriages and other vehicles, with $50,000 capital stock. Officers: President, Horace Mitchell, of Kittery; treasurer, S. J. Morrison, of Portsmouth, N. H.

Articles of incorporation have been filed by the Riverside Truck & Sleigh Company, Bay City, Mich.

The Helena (Mont.) Carriage Works has been started by Henry Nickolai and Alva Marshman, both of whom are experienced mechanics who have been in the employ of the T. C. Power Co. They will make a specialty of business wagons.

W. J. Moore has put in a wagon and vehicle stock in Brownsville, Ore.

Herman Bilse and Will Buri have formed a partnership and will conduct a wagon shop at Monroe, Wis.

The Jonz Automobile Co. has been incorporated in Beatrice, Neb., with a capital stock of $75,000.

Filben Bros. have engaged in the vehicle and implement business in Steele, N. D.

J. T. Clapper has engaged in the buggy business in Culbertson, Mont.

E. A. Eppeland has opened a new stock of vehicles and implements in Stanley, N. D.

J. L. Potts & Son have engaged in the carriage and automobile business in Edgeley, N. D.

The Jackson Motor Works has incorporated, with a capital of $50,000, to open an automobile factory in Jackson, Tenn.

The Central Foundry & Machine Co. is about to establish a wagon factory in Collinsville, Ala.

The Durham Automobile Co. has been incorporated in Durham, N. C., with a capital stock of $15,000.

Henry C. Taylor is about to establish a vehicle factory in Louisburg, N. C.

The Maxwell-Briscoe Co. has been incorporated in Atlanta, Ga., with a capital of $30,000, to make automobiles.

The White Motor Car Co. has been incorporated in Seattle, Wash., with a capital stock of $50,000.

Gulbronson & Marks have engaged in the vehicle and implement business in Winnebago, Minn.

The Florence Vehicle Co. has been incorporated in Florence, Ala., with a capital stock of $10,000.

BUSINESS CHANGES.

John P. Ryan has sold his stock of buggies and implements in Chilton, Wis., to A. F. Decker.

The Ruby Valley Mercantile Co., of Laurin, Mont., has sold out its hardware and vehicle business to C. H. McLean.

Wm. Dougan has sold his buggy and implement business in Glenwood Springs, Colo., to J. S. Woody.

James McIntosh has sold out his vehicle business in Monte Vista, Colo., to Bone & Ward.

S. A. Snyder has purchased the stock of vehicles, etc., of A. B. Turgeon, in Burke, S. D.

Yates & Dickie have been succeeded in the vehicle and hardware business in Grenola, Kan., by Dickie & Marshall.

M. C. Joyce has succeeded to the vehicle and implement business of Joyce & Shrader, in Syracuse, N. Y.

K. S. Peters & Co. have sold their stock of vehicles, etc., in Nampa, Ida., to Fleming & Wilhelm.

H. W. Grieve has sold his stock of vehicles, etc., in Central City, Neb., to P. C. Jensen.

W. E. Wilcox has purchased the implement and vehicle business of E. R. Leedom, in Kearney, Neb.

T. J. Mitchell has bought the vehicle and implement business of S. A. Mangum, in Mt. Vernon, Ia.

R. F. Branson has sold a half interest in his vehicle and hardware business in Zenda, Kan., to Dave Sloan.

S. Schulman has succeeded to the entire vehicle and hardware business of Leonard & Schulman, in Garden City, Kan.

J. C. Wilson has purchased an interest in the E. J. Waugh stock of vehicles, implements, etc., in Williamsburg, Kan.

BUSINESS TROUBLES.

A voluntary petition in bankruptcy has been filed by the Crane Carriage Company, Birmingham, Ala. The liabilities are listed at $5,453.50 and assets at $5,000.

Joseph P. Edmond of Boston and William H. Edmond of Newton, doing business as J. P. & W. H. Edmond, carriage builders, Roxbury, Mass., have filed a voluntary petition in bankruptcy. The total liabilities are $10,252.50 all unsecured. There are no assets.

An involuntary petition in bankruptcy was filed against the Royal Buggy Body Company, of Owensboro, Ky., for the benefit of creditors. Two of the directors of the company were among the petitioners. The concern is capitalized at $40,000.

S. Horace Dane, carriage dealer of Lynn, Mass., has filed a voluntary petition in bankruptcy, having liabilities amounting to $126,591,22. Secured claims are $49,775; unsecured,$2,882.78; notes payable $14,970.04, and accomodation paper $58,350. The heaviest secured creditor is the Ipswich Savings Bank for $40,000, holding security to the value of $50,000. There are assets of $59,600 scheduled, which include real estate, $45,700; stock in trade, $5,300; and debts due on open accounts, $6,500.

Mathias J. Fisher, a wagon maker of Waupaca, Wis., has filed a voluntary petition in bankruptcy. Liabilities are scheduled at $9,789 and assets at $6,050.

FIRES.

The Sendelbach Wheel Company of East St. Louis, Ill., suffered a total loss of its stock by a recent fire. Loss, $60,000, covered by insurance.

Fire in the carriage factory of the Sargent & Hann Company, at Boston, Mass., caused a loss of $5,000.

John N. Kunkel & Sons have sustained a fire loss of $15,000 in their wagon factory in Baltimore, Md.

The stock of vehicles and implements of Adcock & Lowe, in Davenport, Ia., has been destroyed by fire. Loss $10,000.

MISCELLANEOUS.

The New Stratman Vehicle Co., of Dodgeville, Wis., is about to enlarge its plant.

The Mason Motor Car Co., of Des Moines, Ia., is about to build a large addition to its plant.

The Blakesley Buggy Co., of St. Louis, has established a motor car factory at Kansas City, Mo.

Helgerson Bros. are erecting a vehicle repository at Mt. Vernon, S. D.

Thompson & Martin, implement and vehicle dealers of Ansley, Neb., are building a large warehouse.

The Mulholland Carraige Company, of Dunkirk, N. Y., has broken ground for a large addition to its factory. The building will be two stories and basement, of brick and stone construction, 46 x 60 feet.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

The Coming Moderate-Priced Car.

It is given out in some automobile journals that excessive-powered vehicles have run their course, and that the era of moderate-priced small cars has set in. The steps which have been taken towards the realization of such a car are, casting of many pieces in one, a better location of valves, the unifying of motor clutch and transmission parts, the more extended use of ball bearings, carburetter improvements and the lowering of the center of gravity. In some recent makes this lowering is effected by dropping the side members of the pressed steel frame in front of the rear axle and carrying the tonneau seat forward of rear axle by carrying the body between the axles.

The energies and inventive skill of the leaders in the industry are directed along these and similar lines, to evolve an exceptionally strong, simple, compact and durable machine at a price that will come more easily within the range of the average pocketbook.

In Paris, the home of the automobile, the decrease in the number of horses in ten years has been practically insignificant. In London and English cities the number has increased. In the United States the increase within ten years has been phenomenal, and the increase has been especially marked in cities where the automobile is most in evidence.

Horse racing has increased in all countries, and horse breeding is developed, in Europe the governments taking special interest in the improvement in breed and in the supply of horses. When the automobile hove in sight, the cry was made, "the horse must go," but it might probably be susceptible of proof that for each new automobile a hundred or more horses came and said "Neigh."

Still Improving Shops.

Notwithstanding the outward appearances of discouragement to automobile building enterprise, there are very many signs of vitality in the rounding-out of shop equipment and capacity. Few new plants have been built, fewer automobile building enterprises are announced, but there is just enough improvement and extension and rounding-out to warrant the statement that the automobile industry as a whole is in a sound and vigorous condition. The builders of those special appliances which constitute the important parts of shop equipment are now reported to be working on urgent orders, some of which were countermanded or held up. The industry as a whole is animated with a hopefulness and a spirit of confidence which speaks well for continued prosperity.

Compared with even twelve months ago, marked progress has been made along the line of definite construction. Last summer the chief mechanics had their hands full of experimental devices. Since then a thorough sifting has been going on and a process of elimination has been at work. In fact the best shopwork which has been done within a year has been to send to the scrap-heap, figuratively speaking, a whole lot of alleged improvements and devices.

In other words, automobile building is digging out its own permanent channels. There are fewer "Jim-cracks" to try. The mechanical merits of a host of devices and appliances have been determined. The casting of parts in one piece has been developed. Several cylinders are made in one, with their valves more appropriately located. Crank cases and gear box in some cases are made as one carting. The use of ball-bearings is extended to more parts of the machine.

The wisdom of this general line of construction which was first seriously questioned by some of the highest builders is now recognized by these same builders, and all builders are adapting their work to construction of two, three or four parts in one.

Real economy of construction is now being more closely studied, now that the cob-web of mechanical details has been largely brushed aside and clear ideas prevail. This marks, if not an era in construction at least a big step in the way of progress, and coming simplicity. The automobile is finding itself. There are endless improvements to come and modifications to be made but the foundation on which they will rest has finally been laid.

Automobile Centralizing Tendencies.

There are some evidences in the automobile industry of a growth of a few great central concerns, just as prevails in the carriage industry, the steel industry and all other industries. This springing up of great plants is as natural and logical as the fall of rain. Conditions have been gradually working into shape for such results. One or two great factories or central plants are now looming on the horizon. While the automobile was in embryo, or in its evolutions, such combinations were impossible, but now that the car is completed for all business purposes it becomes a safe and legitimate article of merchandise, the production of which has to do with market conditions only.

The fact that large plants are now in sight is a commercial sign that the car is completed. As to the probable effect of a few large or immense plants on the industry, it is safe to say they will have a restraining influence on the increase of small plants. The off-setting factor to this is that as the industry develops the accessories or all the automobile parts can be purchased and associated as is now done in the carriage industry.

The next development therefor logically must be the greater growth of the automobile accessory industry. While comparitively well developed at present, it is on the eve of a greater development because of the centralizing tendency above noted. Carriage building would not be to-day what it is, but for the supporting accessory

Digitized by Google

industry which manufactures every part used in carriage construction. In like manner, the automobile industry as it is to be, will be what it is to be, by reason of the expansion of the accessory industry, but not in exact correspondence.

The chassis making is a special industry and the most important. The construction of the automobile body and seat is the next in relative importance. But in chassis making a number of minor industries are represented. After these two are set aside, the rest of the work on the automobile represents very few branches. But few as they are, that work and the work of chassis making and body making can be better done by the accessory manufacturer than in the automobile plant proper. Gradually great plants will be established but with all their greatness they will be unable to interfere with the prosperity of the smaller makers, though they may limit their number.

Concentrating Forces.

The organization and concentration of public sentiment in favor of good roads has been attended with many difficulties. The magnitude of the problem has been recognized by the leaders—the automobile industry, by its legislative supporters and all interests which have good roads as their ultimate object. A very strong movement will be made at Buffalo July 8-9 under the auspices of the American Auto Association to unite into cohesive form for future aggressive state and national action, the organized farmers of the United States representing over one million live members, state highway officials and motorists.

The idea of this getting together of these three powerful factors is to do something that has not yet been done, to centralize every favorable agency and interest and to map out an aggresive policy for the future in the prosecution of road building. They propose if possible to determine on what is a good road—that is, good from the standpoint of cost, which can be afforded the definition of a "good" road has never yet been written.

Speed Records.

The present season has developed in many parts of the country a craze for making speed records among private owners on their own account and independent of track or racing rules. The racing spirit is irrepressible. It is a part of the American character or nature. It is contagious as is seen in the results. It extends to clubs and associations which lend their official sanction to such speed making. The manufacturers encourage the spirit and fan the flame by furnishing cars guaranteed to make a given mileage with a given amount of fuel.

This spirit is the logical product or outcome of great racing events at home and abroad, and say of it what we may, it is a spirit which is bound to animate hundreds and thousands of owners. To have the fastest automobile and to have made the best record will be an honor which will lead to contests and struggles that will keep the automobiling fever at fever heat.

Cost of Fuel.

The fuel problem in automobile operation has received for some years past more or less consideration. It is not until rather recently that a scientific and at the same time practical investigation has been undertaken without previous preferences for this or that sort of fuel. Fuels are now being investigated with reference to density, boiling point and calorific power and its cost. It would seem that after all the experimentation that had been carried on for years that there was but little room for the chemists and scientific inquirers to find out anything regarding fuels that had not been found out. But there is much to be learned and the industry will soon have possession of the results of careful experimentation which will be a guide in the future. The very best fuel has not been determined that will meet all the varying requirements. That it will be is an assurance given by experts who are driving their way through a maze of investigation.

A. A. A. THE GOVERNING BODY IN AMERICA.

At a central conference committee of three bodies, the Automobile Association of America, the National Association of Automobile Manufacturers and the American Motor Car Manufacturers' Association, held on Tuesday, May 26, the following resolutions were passed:

Resolved, That Jefferson DeMont Thompson, the chairman of this board and of the Vanderbilt Cup Commission, be instructed to notify the corresponding boards or committees of the representative automobile associations and clubs of foreign countries that the Automobile Club of America is a local club, situated in the city of New York, without national functions or jurisdiction, and

That all communications concerning national or international affairs must be addressed to the American Automobile Association at its headquarters, No. 437 Fifth avenue, New York City, or to the chairman of its respective boards; and

That so far as the rules of the Vanderbilt Cup Race for 1908 are concerned, on receiving a communication direct from any foreign association or club concerning such rules, this board will give such communication prompt and courteous consideration.

That the above resolution is not intended to effect local events and those not national or international in their character, except that sanctions must be applied therefore to the A. A. A.

Resolved, That the chairman of this board be directed to notify all foreign and American manufacturers that the American Automobile Association, the national governing body in the United States, will hereafter annually sanction but three national or international events, namely the Vanderbilt Cup Race for racing cars, the annual touring contest for the Glidden and other trophies, and the DeMont Thompson Cup contest for stock cars; and

That, in accordance with an understanding between the American Automobile Association, the National Association of Automobile Manufacturers and the American Motor Car Manufacturers' Association, as represented in a central conference committee of three bodies, the American Automobile Association will enforce the sanctioning privilege thus committed to it by disqualifying from further contests under its sanction all manufacturers, both foreign and American, and all drivers of whatsoever nationality participating in any race or contest for which a sanction shall be refused or, after notice, withheld.

BIG DEMAND FOR SMALL CARS.

Alfred Reeves, general manager of the American Motor Car Manufacturers' Association, returned recently from a fortnight's tour of Western factories, and says that full time has been restored in almost all the factories, while night work is being done in special departments of some. The demand of small cars for all types has been extraordinary. Business depression has not curtailed production. "I regard it," he says, "as an indication that the automobile has ceased to be a luxury for a few and become a necessity for the many."

Every wrong done to one man by another is an offense against the law of justice.

Digitized by Google

POWER OF ALCOHOL EQUAL TO GASOLINE.

Only recently the engineers of the H. H. Franklin Manufacturing Company, Syracuse, N. Y., announced that the results obtained from the experiments carried on with the alcohol motor in the laboratories at the Franklin automobile factory did not warrant the belief that there was an immediate future for the alcohol motor. It was stated, however, that the engineers had not finished their work and that they were experimenting, with the possibility that the problem would finally be solved.

At that time it was pointed out that even if alcohol and gasoline could be purchased at the same price per gallon the gasoline motor would be more economical for the reason that there was a great deal more energy in a given amount of gasoline than in a given amount of alcohol.

The Franklin engineers have now so far perfected the alcohol motor that it is, size for size, as powerful as a gasoline motor. The former tests were with a regular gasoline motor converted to use alcohol. Under the knowledge gained by these experiments they designed and built from the ground up a motor adapted to alcohol use.

Much to their satisfaction, this motor is thoroughly practical in every respect for automobile use. Only ninety pounds compression is used, as against 150 pounds used by the United States government in its tests, and the results of the Franklin motor equal the results of the government tests. Compression above ninety pounds is hardly practical for automobile motors.

With the improved Franklin motor alcohol is as economical to use as gasoline with both at the same price per gallon. This motor shows a consumption of alcohol per brake horse power hour of about 1.05 pounds.

There is every reason to believe that the price of alcohol will be gradually reduced, so that the alcohol motor is certainly going to play a very important part in the automobile industry. The fact that alcohol is much safer than gasoline is greatly in its favor.

Contrary to predictions by eminent foreign experts, the alcohol produces no bad effect on the motor itself. These experts have expecteod that in process of combustion certain chemical compounds would result that would be detrimental to the working surface of a motor. The Franklin engineers declare that not anything of this kind occurs.

The successful working out of the alcohol motor is an achievement of unusual importance. The problem has engaged the attention of the governments of France, Germany and the United States for some time, and the results of these government tests have been watched with a great deal of interest.

COMPLETE ELECTRICAL EQUIPMENT OF A MOTOR CAR.

There has just been completed in New York City an electrical installation that is said to be the most complete ever put in an automobile.

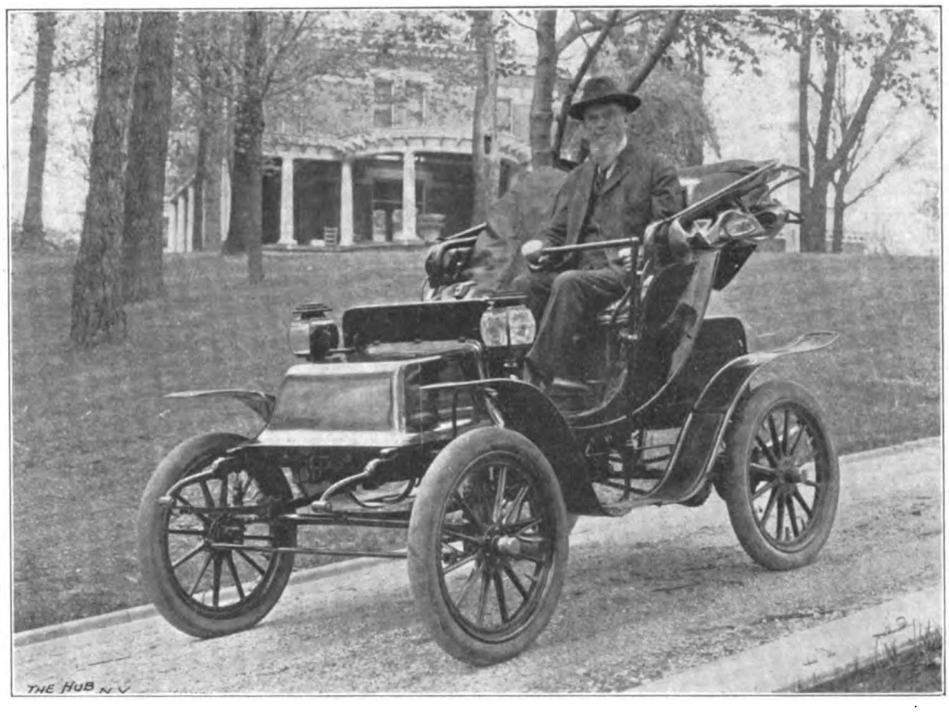
This equipment consists of two batteries, connected in series, located under the rear seat of the machine. The batteries are charged by a dynamo situated under the front floor boards. A wood split pulley, attached to the shaft between the clutch and gear box, together with the belt, drives the dynamo and air compressor, which inflates the tires and operates the pneumatic jacks for raising the machine. In addition to the dynamo there is a charging device located on the running board, which enables the driver to charge the storage battery from any electric light socket.

The headlights are equipped with stereopticon incandescent lights, which can be turned off or on at will. The side and rear lights are fitted with small incandescents.

By each of the side doors of the body there is a lamp, turned on automatically when either door is opened, lighting the way to the interior, where another lamp operates simultaneously by the same means, illuminating the inside.

By raising the bonnet of the engine four lamps on either side of the motor are automatically turned on. There is also a lamp in the pan under the engine and also lamps beneath the chassis which are turned on from the switchboard. On the dash are five lamps, illuminating the speedometer, ammeter, volt meter, pressure gauge, oil feed drips and clock.

Attached to each wheel rim is a device which indicates when the air pressure in the tires is below sixty pounds by sounding one of the electric horns attached to the dash. An indicator on the dash locates the trouble instantly. The same horn blows and the same indicator operates when any bearings are hot, the water in the radiator gets low, the oil in the oil box becomes half empty or when the gasolene gets down to five gallons.



J. M. Studebaker, Head and one of the Founders of the House, in one of their Cars in front of his home at South Bend, Ind.

Digitized by Google

Putting on either of the foot brakes or the emergency blows an electric horn attached to rear of the car and drops a sign "Stop." As soon as the brake is released the horn stops and the sign disappears.

There are four lights in the folding top which are turned on when desired. On each end of the rear seat and on the back of the front seat there is an electric cigar lighter. Situated near each of the wheels are portable lamps, for use about or under the chassis.

In the rear of the car is a box with a celluloid front, through which the license number, for whatever State the car is in, is visible. These numbers are painted on a curtain, and can be be turned at will.

The signalling equipment consists of three Klaxon horns. A chain attached to the steering column operates these electric horns, and when all three are going they can be heard for a mile distant. If the occupant of the tonneau wishes to speak to the driver, a special telephone transmitter is used, and the electric horn on the dash proceeds to talk in a loud tone.

If the driver wishes to say a few things to a teamster, it is not necessary to waste strength shouting. He simply speaks into his trinsmitter and the electric horn on the mud guard repeats his words loud enough to be heard several blocks.

STUDEBAKER GASOLINE-DRIVEN AMBULANCE.

Illustrated on page 109.

One of the first gasoline-driven ambulances to be used in the vicinity of New York has just been delivered to the Kings County Hospital, Brooklyn, by the New York branch of the Studebaker Bros. Mfg. Co. It is built on the standard Studebaker 30-35-horsepower chassis, with a 136-inch wheelbase, and represents a new type, of which several are now under construction for hospital use. Four collapsible berths are provided, so arranged that they can be folded up out of the way when not in use. Access to the interior is gained both from the rear and from the side, just behind the driver's seat. The smooth and quiet running of the gasoline motor and the ease with which it can be controlled, as well as its far greater speed and unlimited radius of action make the gasoline ambulance far superior to the electric for emergency service, and the wonder is that its unlimited possibilities in this direction have not been realized much sooner than has been the case, for next to getting to fires promptly there is nothing in which speed is so often a matter of life and death as the numerous calls for an ambulance which are a daily part of life in every large center of population. The panting and galloping horse with the clanging wagon behind him is a familiar sight in every city, and the fuss he makes in covering the ground gives an impression of great speed, but the manner in which runabouts and touring cars on pleasure bent swiftly glide by and still keep within the legal speed limit shows more plainly than words that the ambulance horse's speed is as much vertical as it is horizontal, which accounts for the poor progress made.

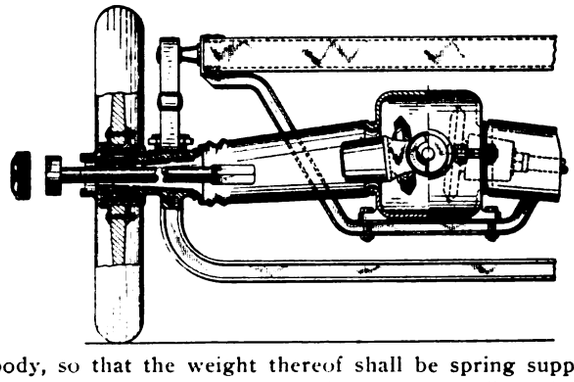
BIG PREPARATIONS FOR 1909.

At Newark, N. Y., the Mora factory, it is reported has a full force working on their regular cars and the new Vanderbilt Cup racer. At Rochester the gearless factory is bringing out a new 24-horsepower car of the small type to go with their big six. At Buffalo both the Thomas and Pierce factories are busy on cars of the larger type. The Motorcar Company is doing night work to turn out the friction drive Cartercar. The Brush runabout new models are well under way. The Aerocar factory is making big plans for 1909, and so is the De Luxe. The Ford plant is busy with runabouts and the new 20-horsepower touring cars. Wayne is making big plans looking toward a consolidation with the Northern plants. The Cadillac is very busy with the single cylinder car, and the Thomas Detroit Company is finding difficulty getting out enough new 24-horsepower cars. The makers of the Jackson car have doubled the size of their factory, and Buick is producing in large quantities. Reo shipped 803 Reos in April alone and will make 4,000 cars in 1908.

IMPROVEMENT IN TRANSMISSION GEARING FOR AUTOMOBILES.

The patent office recently granted to Ernest G. Hoffman, of New Rochelle, New York, a patent on an improvement on transmission gearing for automobiles.

This invention relates to driving mechanism for automobiles in which the two driving road wheels are themselves driven by a two part shaft or axle, the shaft or axle being in two parts so as to permit independence of movement of the two road wheels under certain conditions, as in making a turn. Usually each part of the shaft or axle is connected directly to the corresponding road wheel, but sometimes, as in heavy vehicles, each part of the shaft carries a pinion which meshes directly with the gear on the road wheel. The two parts of the axle are usually driven from a common source through a differential gear, but they may also be driven by seperate motors without the interposition of a differential gear. Heretofore it has been the common practice to mount the differential gear or the separate motors directly on the axle so that the weight of these parts is not supported. For this and other causes this general system of transmission, generally known as the "live-axle drive", is regarded as unsatisfactory, especially for high powered cars, because of the great weight of the non-spring-supported parts, and the side-chain drive has been used instead, notwithstanding its disadvantages. It has been proposed, however, to support the differential gear or the independant motors upon the



car body, so that the weight thereof shall be spring supported, and to provide such connections betwen the differential gear or motors and the wheels as will permit of relative movement of the wheels and body as the car traverses an uneven road surface, such connections embodying a shaft having a universal connection between one end thereof and the differential gear and a universal connection between the other end thereof and the wheel.

The present invention has for its objects to dispense with one of such universal joints and to secure for the connecting shaft the greatest possible length with a consequent minimum degree of oscillation at the ends thereof, and in accordance therewith the gearing through which the wheel shaper or axles are driven is so constructed and arranged as to permit them to have a free movement of oscillation in vertial planes.

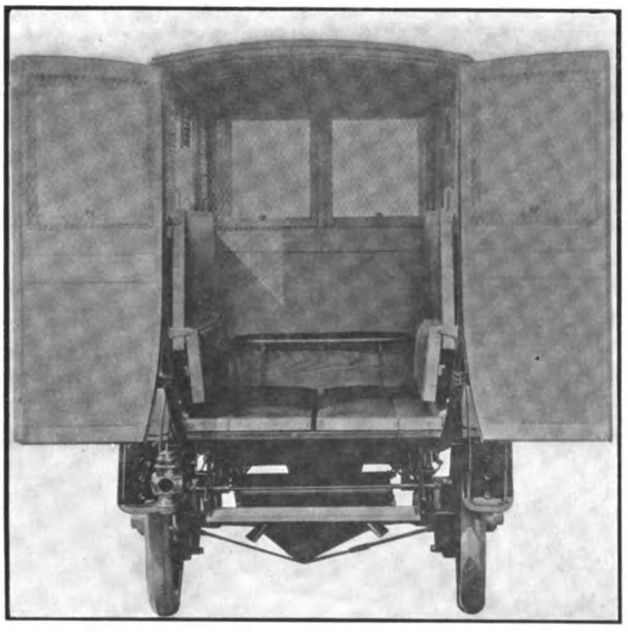
In the embodiment of the invention illustrated herewith, the body of the vehicle is shown as supported through the usual leaf springs upon an axle. The latter is shown as dropped, so that each hollow axle end is accessible from its inner end as well as from its outer end. Each driving road wheel is journaled upon the hollow axle end. The driving mechanism, with which the invention is particularly concerned, is directly supported by the body of the vehicle, through the medium of a suitable hanger and is, therefore, spring supported with reference to the axle and wheels.

Digitized by Google

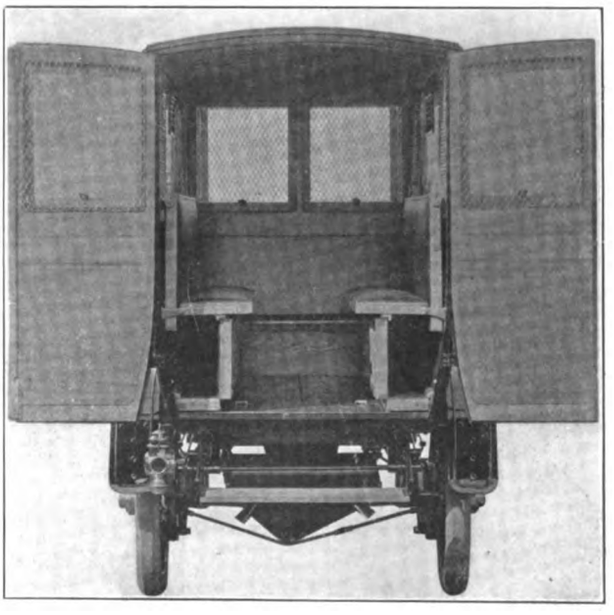
Illustrated Automobile Section, June, 1908.



Studebaker 30-35 Horse Power Hospital Ambulance.
Described on preceding page.



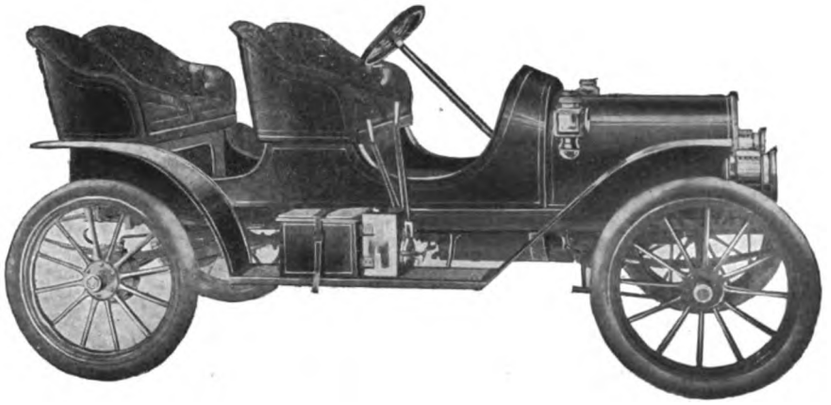
Arranged to carry severely injured patients in a reclining position.



Arranged to carry persons slightly injured in seated position.

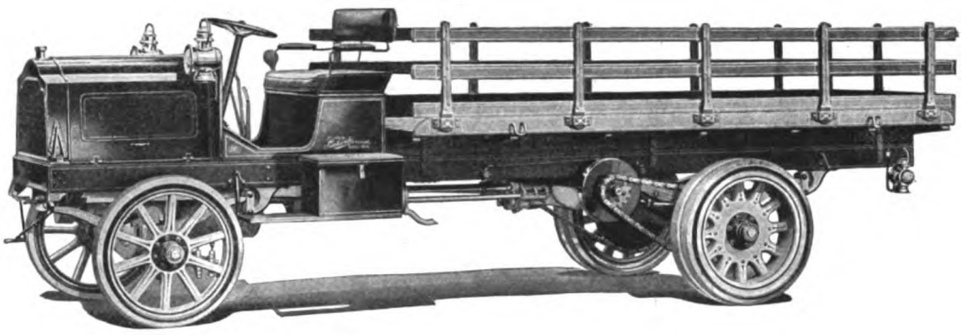
Three Views of the Studebaker Hospital Ambulance.

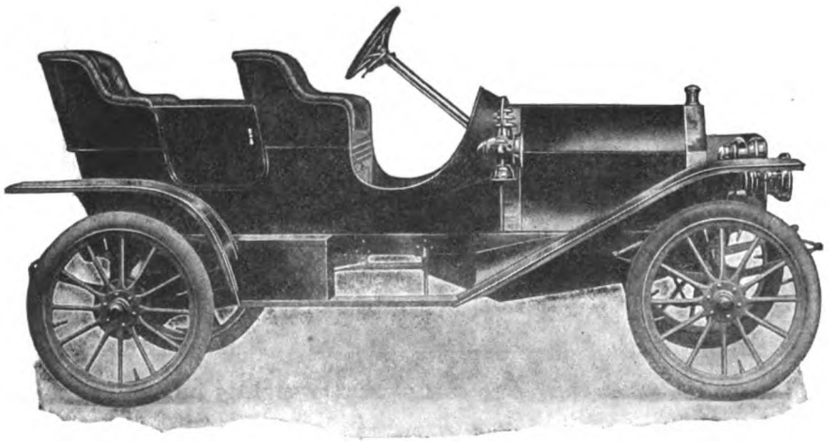
Digitized by Google



THE CAMERON
LIGHT
TOURING CAR.

THE PACKARD
THREE-TON
MOTOR TRUCK.

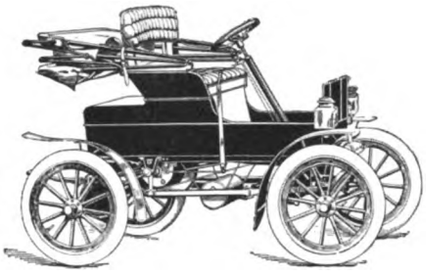




THE OVERLAND
GASOLINE
TOURING CAR.

Variety of Late Models of Familiar Manufacture

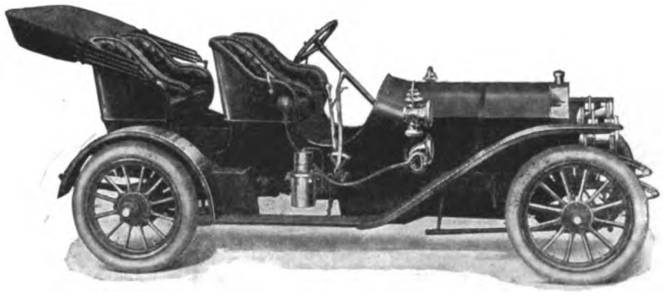
Digitized by Google



"JEWEL" GASOLINE RUNABOUT.
Made by
The Forest City Motor Car Co.,
Massillon, Ohio.

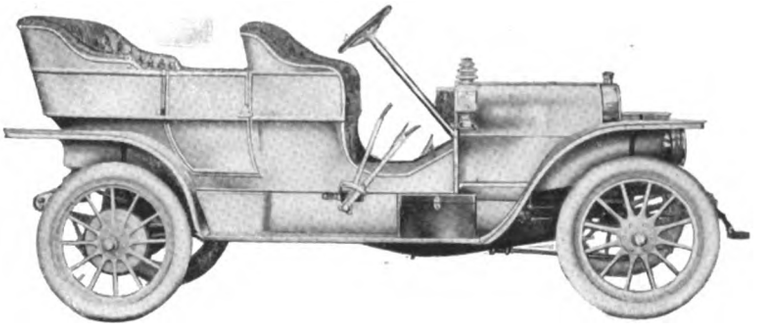


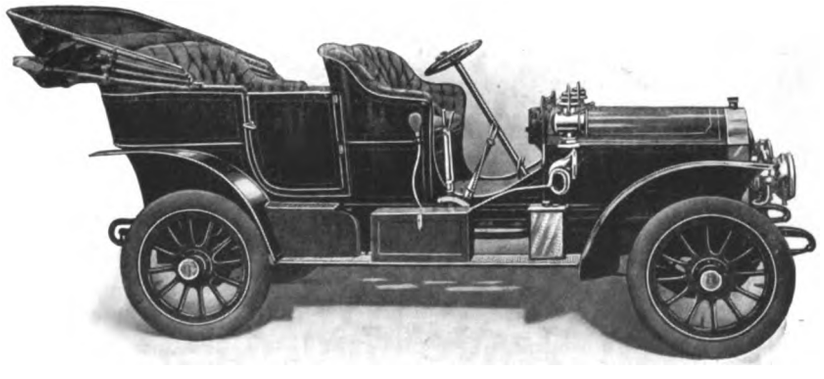
"JEWEL" GASOLINE STANHOPE.



APPERSON'S
FOUR-PASSENGER
30-35 H. P. ROADSTER.

THE MIDLAND
30-35 HORSE POWER
TOURING CAR.

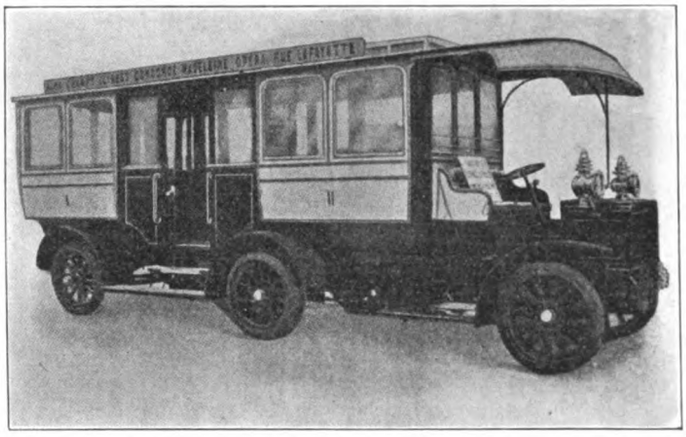




THE GROUT
GASOLINE
TOURING CAR.

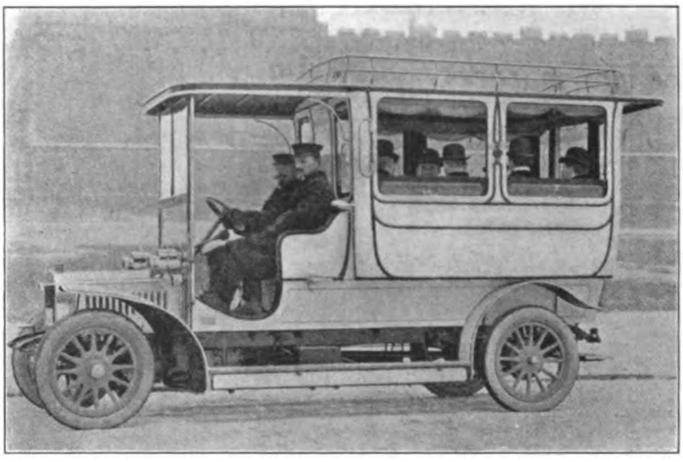
Variety of Late Models of Familiar Manufacture

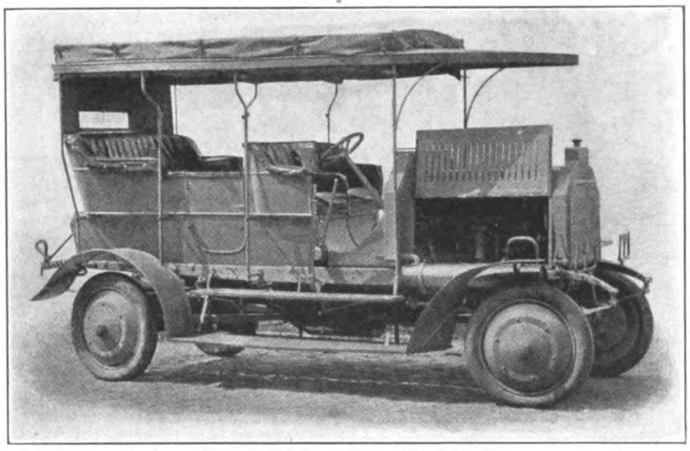
Digitized by Google



SIX WHEEL OMNIBUS
With
SIDE ENTRANCE.

HOTEL OMNIBUS
of
GERMAN DESIGN.





DAIMLER CAR
Made for
WEST AFRICAN TRIP.

Gleanings from Foreign Trade Journals.

Digitized by Google

Body Construction and Finish

FITTING A FOLDING HOOD TO AN OPEN MOTOR CAR.

Drawings Accompanying.

The high pressure travel of the motor car is continually throwing up to the surface some defect, or some needed improvement in comfort, or protection from incidental causes of fast travel. In this upheaval of cause and effect, the fitting up of canopies has come in for a large share of special attention.

To fit a canopy head up in a smart style, and on lines that are suitable to the design of car it is for, demands as much skill of the coach maker, acquired through his long experience in fitting up cape hoods, landau heads and Victoria hoods, gives him a leverage in the originating and expansion of this special work.

The drawing herewith of open car, to which a canopy head is fitted, shows a design of open body richly fashioned in its lines; the hind body seat affords spacious room for two occupants, while the front seat is in proportionate harmony and provides seating for two. The back and front quarter seats are framed and metal paneled, a ¾-in. moulding covering the jointing with the framing. These mouldings are made of half round steel, and fixed with very fine screws, the heads of which are filed

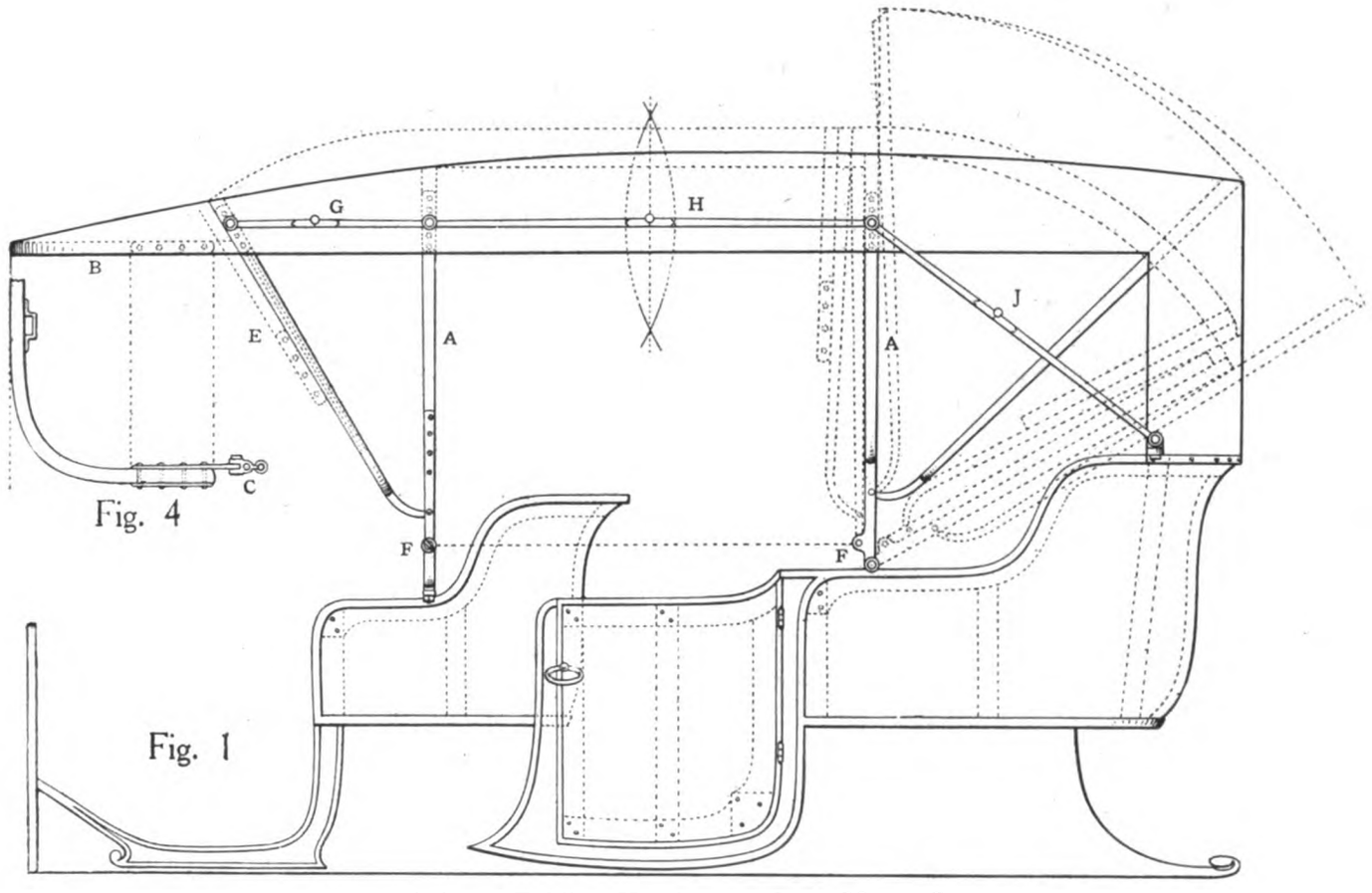


Fig. 4

Fig. 1

Fitting a Folding Hood to an Open Motor Car.
Described on this page.

taste and artistic forethought as fashioning a new style of bonnet to suit the individual features of the fair sex. For as one style of bonnet would be at variance with a particular type of features, out of harmony in their chiselling to the arrangement and design of this head dressing; but in another type of beauty harmonize and enrich the features through its lines and arranged proportions, so a canopy head is made to look smart, as well as protective, in proportion to its lines and bulk, which must harmonize with the size and design of the car it is fitted to.

But apart from the necessary smartness, a head of this character in almost every instance embodies mechanical skill and ingenuity to make it effective, and the advance in the design of the motor carriage, and its accessory fittings, amply prove that the coach maker is equal to the occasion. In this particular the level with the surface so that no depressions through the painting can appear.

This design is given, principally, to show the construction of the head, and how it should be fitted up in detail, also to show the position of the canopy when the joints are all struck and the head in position. It becomes of the first practical importance to those in the trade who now cater to this class of work, either in building bodies complete or in the much more lucrative branch of jobbing—in which the fitting up of hoods is both a particularly practical item as well as a profitable one, to be able to undertake these jobs, and turn them out of hand in a thorough and smart way.

One of the main points to keep in view in fitting up a canopy head is to arrange the structure so that there will be little ob-

Digitized by Google

struction to the entrance of the body; also in getting out the same condition must be observed, because means of getting into a vehicle are perhaps easy and simple in themselves, but in getting out they may be most inconvenient and even dangerous. So that in a fitting of this kind these main features must be kept in the foreground, as well as the mechanical means of bringing the job to a successful issue.

The bows or slats for a car canopy are made with short, quick corners, so as to build the line of the head up to as square an outline as the bending of the slats will allow; at the same time a quick cornered slat admits of a clearer head room; in this respect a cape hood differs very materially from those fitted to Victorias and cabriolets.

In the elevation drawing herewith, Fig. 1, which has been made principally to illustrate the fitting up of a folding canopy

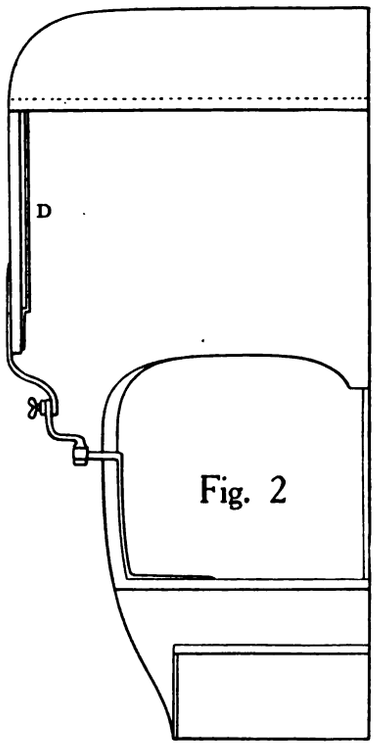


Fig. 2

head, the positions of the slats, and the mechanism, are all clearly shown, so that those who have to undertake this special work, or who may contemplate doing so, may be practically assisted to a knowledge of the necessary requirements.

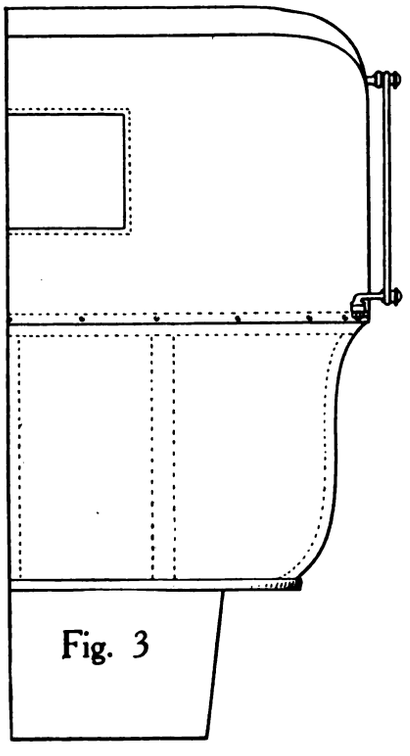
On a car similar to the one under treatment here, coming into the works to be fitted with a similar canopy, it is the best and most systematic plan to take the whole length of the body from point to point and set off the divisions for the principal upright slats in the front and back seat quarters, as at A A, and the requisite height from the seat to the roof over all—4 ft. 1 in.—and set off the length and depth of the canopy. When this plan is followed, the head prop pieces and joint boss ends can be forged by the smith and fitted up, and the head joints forged and shut up to the dimensions set out on the full size drawing on the black board.

The body head fittings can also be made; these are made with spur feet to take the pillar and elbow framing and forged with corner plate feet to take the seat cross bar, as illustrated in Fig. 2. The prop stays of the body are forged with cranked elbow projecting stems, on the end of which a boss is forged to take head slat stay in front, as shown in Fig. 2. This stay is bent to take the stay of front bow, the bolt end of which goes through the boss of the stay, and is tightened up with a wing nut, as shown in the drawing.

The hind quarter props are forged with T feet to go along the elbow, while the prop stay is cranked over the top and swaged to a spindle end to take the boss of the side joint, and again swaged to a ½-in. bolt end, for the finishing nut to screw the joint boss home to the spindle shoulder.

The hind body side joint is knuckle centered out of the center from boss to boss. This is done so that when the head is down as is shown by dotted lines in Fig. 1, the joints on their top halves line with the top of bows they are fixed to, as at the centers of the top front and the back-quarter side joints. The center joint connecting the front and back upright bows is made with a knuckle in the center of the joint, which, when struck, will line with these slats. The front bow shade slat is made individually; the slat is shown horizontally at B. To the sides of the end butting the front slat is fixed plates outside and inside. The end of the inside plate is made to project forward and slip into the jaw of a sliding hinge boss, as at C, Fig. 4. This boss hinge is made with a 3/16-in. hole drilled through it, close to the end of the jaw plate, so that it can slide up and down on inside brass rod, as at D, Fig. 2. This arrangement allows the front bow B to slide down and hinge up against the front slat, as at E. Fig. 4 shows how this slat is made and fitted with hinge plates and boss hinge. C is the bow or slat B in plan. To each side of the slat a staple is provided, so that a strap can be fixed and buckled up tight, as the bonnet of the engine, or the chassis, on either of which provision is made for this purpose, at least in a general way.

On forging the hinge irons for the front and back upright slats, boss eyes are made to take the hinge bolt of the slat irons. These centers are forged at F F, Fig. 1, and when it is


Fig. 3

desired to fold the canopy up the front horizontal slat B is hinged, and slid down to line with the front seat, as at E. Then the joints G and H are struck, and the front head is unbolted at the front eye F, which is also shown in Fig. 2, and shifted to the boss eye at F on the hind quarter upright slat, and hinged up together, as shown by dotted lines. Then the hind quarter side joint J is struck, and the whole head falls down at the angle of the slats, shown by dotted lines. The horizontal front slat B lying parallel, as the drawing explains. The practical value of the instructions given here, in going about a job of this kind, will be fully understood by those in the trade having to deal with such emergency work.

Fig. 1 shows the full elevation of a pretty design of open sided car, with the full practical instructions from this position of

Digitized by Google

fitting up an up-to-date canopy head. While the end section, Fig. 2, shows the half width and shape of body, the projection of head props on body, and slat, and the position of the side forging lines of the head and body stay irons.

Fig. 3 shows the half back section of body and its contour lines; the body and head prop irons; the size and position of the back light in the head. Glass is not used in motor canopy work; celluloid is the material universally used in folding hoods on motors. Celluloid being a material that is as transparent as glass, and as pliant as the material the hoods are covered with, makes it the most suitable for lighting purposes in these hoods.

SPECIAL AUTOMOBILE COLORS.

While freak and "faddish" colors for automobiles, and, as a matter of fact, for all other vehicles, are in the main to be deplored and avoided so far as possible, there are times when the painter must resort to them or lose trade.

At one of the late New York automobile shows an automobile painted lavender attracted widespread attention, and even the big dailies devoted space to the novel color effect. The outcome of it all will be that New York driveways will presently show plenty of lavender autos, so that there is no other way whereby the day may be saved except through the medium of lavender, however inappropriate and unassertive and pointless the pigment may appear to the painter.

Doubtless you will shortly be able, if indeed you are not now able, to buy this much lauded color ground in japan, and ready for breaking up in turpentine for use, but if this means fails you, then shop mix the pigment as follows: Use flake or silver white for the base; add ivory drop black in a small quantity to approach somewhat unto a French gray. Then to the mass add a dash of No. 40 carmine and ultramarine blue, whipping the whole carefully together until the shade of lavender desired is reached. It will be understood, or should be, that the carmine and ultramarine are to be added cautiously, and scarcely more than a flake at a time.

Technically, lavender is French gray with a greater quantity of carmine and ultramarine added than is used in the making of the gray. The base or ground to be preferred for lavender is a pure silver white or flake white surface, toned gradually up, after the first two coats of white, to the gray, and thence directly to the lavender. Use a coat of color-and-varnish over the flat color, and then carry this lavender tinge into the next coat of rubbing varnish. Finish with a practically water white, colorless finishing varnish, in order that the original purity of the color may be maintained throughout.

In New York, and elsewhere, the reader will see a good many racy, lean, speedy looking motor-driven wagons painted French gray, pearl gray, dove color and mauve, along with light and medium gray. The two latter, however, are lacking in brilliancy and do not carry lustre enough to appeal strongly to critical riders. French gray, with its suggestion of the gay Parisian about it, is brought up simply from an Arctic, cremnitz, silver or flake white base, adding jet or ivory black to it, and then enriching the whole by a pinch of carmine and ultramarine blue. Pearl gray is brought up same as French gray, except that a great deal less of the black, and considerably less of the carmine and ultramarine, are used.

The dove color, with its sheen of pigment quite distinctive from the established grays, is made from a white base, preferably cremnitz white. Add sparingly of refined lampblack and medium shade ultramarine blue, beating all together intimately, and then give the mass a flush by the addition of a drop or two of Indian red.

Mauve is a color not far removed from French gray, and, barring a color chart, a visit to a first-class dry goods store will enable the painter, inexperienced in this particular color, to get the correct shade. It is made of a white base saddened with ivory black and gently toned up with crimson lake and ultramarine. All these grays, the dove and the mauve color are best worked up over a pure white ground. They are, manifestly, very delicate colors, sensitive to an extreme degree, almost, and require the most painstaking treatment, both in the matter of preparing the surface, applying the color, and in working over it with the various coatings of varnish.

Nevertheless they are colors once established upon the surface with due regard for all the niceties involved, which may be depended upon, as a rule, to wear durably. They have the advantage of not magnifying or exaggerating the actual size of the surface, and they likewise tend to render inconspicuous the vehicles upon which they are used. These characteristics confer a degree of popularity upon the pigments which would not otherwise obtain. All the above colors take kindly to striping effects in aluminum, gold, black and contrasting lines of gray.

TO TOUCH UP AND VARNISH AN AUTOMOBILE.

In all automobile work the main consideration, at the outset, is to get the car located at a point in the shop where the best possible light may be commanded. Certainly, light at least on both sides of the car should be had. A good arrangement by which the car may be elevated so that the workmen can get underneath it fairly well consists of a couple of strong horses, made of hard wood, with the track timbers made wide enough to catch any style of tire, and both horses screwed hard and fast to the shop floor. A couple of runway timbers leading from the floor up to the height of these horses, with a pitch of something like 30 degrees, will furnish the means of elevating by an easy way the car to its desired position. Such apparatus having been installed and the car placed in the location best suited to the purposes of the painter, the first step covers cleaning the parts. This will be found no easy job. The mechanism of the sensational "devil wagon," as some sanctimonious tiller of the soil has named the automobile, is of such a nature as to make every step of the cleaning up process difficult.

Turpentine, while costly, is after all about the best cleaning material. It has a sharp bite to it, and licks up the grease nicely. Parts saturated which serve as a covering or protection for delicately adjusted mechanism may, if desired, be smeared over with some oxalic acid, or, if more convenient, with strong lye. Either of these two mediums is a powerful detergent and will unseat impacted accumulations when other agencies fail. The underparts having been put in proper condition, we next turn our attention to the body, which should be surfaced down uniformly with pumice stone, flour and water. The gloss having been reduced and the surface rendered free from all nibs and knobs of dirt, etc., followed by a thorough washing to make it clean, the color should be matched as closely as possible. The fact that many automobile colors are made up colors to meet the individual fancy of the manufacturer of the car, and do not in any way represent a standard color, confers additional trouble upon the painter. Many of these colors are so fearfully and wonderfully wrought that their chief propensity is to fade promptly, in which case trouble begins to brew for the painter when he matches them up in just about the ordinary way. Probably the best method to get the match quickly is to varnish a small space, and then match to that, making the match color more in the nature of a varnish color, in which state it is less acted upon both by the light and the drying process.

Following the rubbing and cleaning up of the body surface, the running parts are touched up and made fit for varnishing. The extreme under parts, to be finished in black, may now be gone over with a very hard drying black varnish. Now dust off and prepare the body surface for coating, upon which proceed to do by flowing a full, swimming coat of elastic body finishing varnish throughout. Then varnish the running parts with an elastic running parts varnish, and immediately vacate the premises until the varnish over all is quite out of the way of dust, etc.

Digitized by Google

SELF PROPELLED VEHICLES.

The above head is the title of a book containing much valuable informatioin for the machinist and motor car owner. It is a practical treatise on the theory, construction, operation, care and management of all forms of automobiles, and contains upwards of 650 pages and 500 illustrations and diagrams, giving the essential details of construction and many important points on the successful operation of the various types of motor cars driven by steam, gasoline and electricity.

The book, of which J. E. Homans is the author, has recently been revised and is considered a standard work on the subject. The price of this popular edition is $2.00, and will be sent postpaid to any address within the United States postal jurisdiction by the Trade News Publishing Co., 24 Murray street, New York.

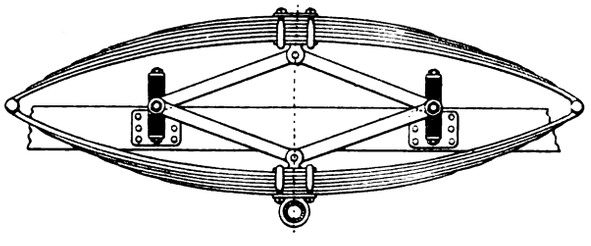
TAXICABS HELPING FOREIGN INDUSTRY.

The wonderful growth of the taxicab business has given new life to the foreign automobiling industry. Every big plant is now turning out motor cars. Even the conservative Panhard house has begun the construction of a four-cyinder "12-16" cab for taximeter purposes in America. The first of these will be ready in June, and after that they will be turned out at the rate of fifty a month.

SPRING SUSPENSION.

The acompanying illustration represents a recently patented means of suspension for vehicle springs and especially to springs adapted for use upon motor vehicles. This improvement is the idea of James C. Whittle, of Flint, Mich., patent for which was granted last month.

The object of this invention is to provide a simple means for by suitable clips to the inner side of the upper half of the supporting the vehicle frame upon elliptical springs in such a manner that all shocks and vibrations will be taken up by the springs and transmitted to the body. The diagram is a side elevation of the device embodying the invention and showing the same attached to the frame and axle of a vehicle. Secured by suitable clips to teh inner side of the upper half of the spring is a plate having downwardly extending ears between which are pivoted the upper ends of levers, and these levers



together with similar levers which are pivoted between ears extending upward from a plate secured to the lower half of said elliptical spring, form a toggle connection between the upper and lower halves of spring. The pivot pins which pivotally connect the outer ends of said levers are extended laterally and each formed with a vertically extending sleeve secured at its ends to the laterally bent ends of a yoke. Coiled springs are sleeved upon said rod between the laterally bent ends of the yoke and the pivot pin to normally hold said pin in a mid position between said bent pin ends. Trunnions each formed with a base plate by means of which it is rigidly secured to the outer face of the sill, extend longitudinally outward from said sill and form supporting pivots for yokes, each yoke being formed with a hub or sleeve portion projecting laterally from the yoke near its lower end to receive the trunnion and turn thereon.

The yokes, together with the pivot pins, form supporting cranks to pivotally attach the toggle levers to the sill, said trunnions being out of axial alinement with the pins, and thus the elliptical spring is attached to the sill by the toggle levers only, and any movement or vibration of the axle is reduced to the minimum. The coiled springs also serve to yieldingly support the load and absorbing vibration.

WHY TAXICABS ARE SUCCESSFUL IN NEW YORK.

To persons who occasionally use public carriages on the streets of New York it is not surprising that taxicabs are taking the place of horse drawn vehicles in numerous livery stables and driving many cabmen out of business. Fares are two or three times as high as in London, Paris and other European cities, and, considering the service rendered and the value of the equipage employed, are often plainly exorbitant. High rates of fare opened the door for the taxicabs, and instead of meeting this new competition by lowering their own rates the cabmen have stood pat, and many of them have stood idle as well, while the motor cars made increasing inroads into their business. Experts say there is still good money to be made by the cabman who will take a low enough fare to keep his horse working instead of standing idle nearly all day.

Wants

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, five cents a word. Initials and figures count as words. Minimum price, thirty cents for each advertisement.

HELP WANTED.

Wanted—Foreman trimmer for carriages and automobiles, to take charge of shop. "W. C.," care The Hub, 24 Murray St., New York City.

PARTNER WANTED.

Wanted—A first-class, wide awake, thorough, practical and capable carriage man, with exceptional record, to invest $8,000 or $10,000 and assist in manufacturing and marketing high grade buggies, sulkies, etc., with a thrifty, reliable, established concern doing a $100,000 business in Central Ohio. Elegant opportunity for the right man. Full particulars by addressing "E. M. H.," 327 Wheeler St., Akron, Ohio.

SITUATIONS WANTED.

Wanted—Situation as blacksmith foreman in large factory. Has had fifteen years' experience as foreman in large factories and has all the latest methods of getting out the work. Can come well recommended. Address "Smith Foreman," care The Hub, 24 Murray St., New York City.

Wanted—Position as foreman painter by young man with plenty of successful experience. Would prefer high grade work. Address "S.W.R.," care The Hub, 24 Murray St., New York City.

Wanted—Position by an experienced foreman blacksmith, on medium or good grade work. Organizer; honest, reliable. Wishes permanent position with a good manufacturer. References A1. Address Box 180, care The Hub, 24 Murray St., New York City.

FOR SALE.

For Sale—Rare opportunity. Carriage factory for sale in hustling Indiana city. Established forty-five years. 80 x 80 two story brick building, and large vacant lot in the rear. Will sell plant complete as a going plant, or will sell reality separately. Address W. W. F. care The Hub, 24 Murray St., New York City.

MISCELLANEOUS.

Wanted—We are in the market at all times for fuel hardwood in lengths of 24 in., 30 in. and 36 in. Must be dry. Address Alwart Bros. Coal Co., 165 Webster Ave., Chicago, Ill.

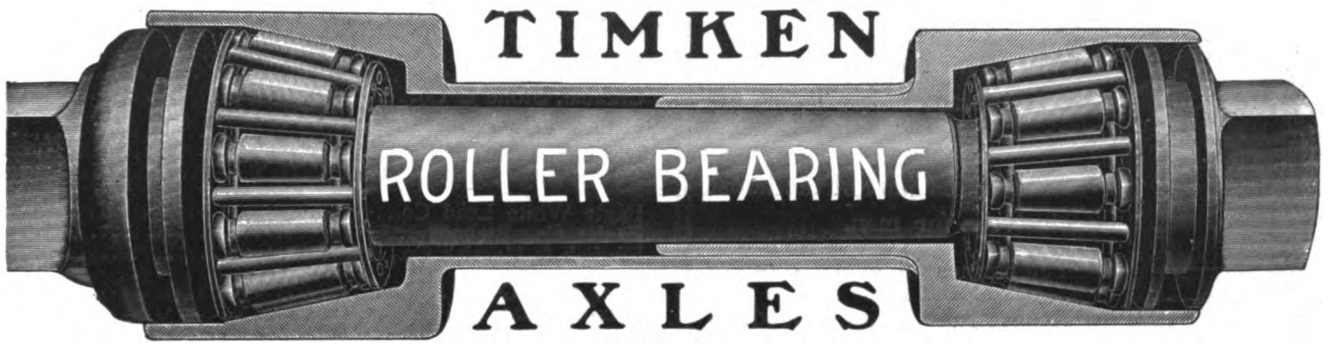
PATENTS.

Patents—H. W. T. Jenner, patent attorney and mechanical expert, 607 F Street, Washington D. C. Established 1883. I make an examination free of charge and report if a patent can be had, and exactly how much it will cost. Send for circular.

Digitized by Google

MORE EVIDENCE

Showing just what can be done by reducing friction through the use of



Buffalo, N. Y.

The Timken Roller Bearing Axle Co., Canton, O.:

Gentlemen—I have used a set of your 2-in. axles for three years, and they have given the best of satisfaction. I will never have another wagon made without them. My reason for that is, I can draw a two-horse load with one horse. We only oil our wagons once a year, which is a big saving.

They will do all you claim for them.

Very truly yours,

HENRY J. WALZ,
Bakers and Confectioners' Supplies.

This is only one of hundreds of such letters we have received from users from all parts of the world.

What do you think it means to your customers to be able to do the work with two horses that is usually required four to do.

If you want more evidence and facts, write us.

The Timken Roller Bearing Axle Co.

CANTON, OHIO

BRANCHES:

10 East 31st Street, New York **429 Wabash Avenue, Chicago**

Digitized by Google

NEW YORK CITY

THE HERMITAGE

A CLUB HOTEL FOR MEN

The name tells the story.

Seventh Ave. and Forty-second St.

Junction of Broadway.



Restaurant on the street floor —a restaurant where ladies are welcome.

Every other part of the house exclusively for **men.**

Telephones in every room.

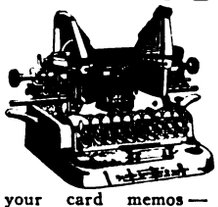
Respectful, quiet, obedient and alert Japanese servants.

Bedroom and bath **$2.00** a day upward.

Send for Booklet.

T. F. PADDELL, Proprietor

You Can Easily Operate This Typewriter Yourself



Don't worry your correspondent.

Don't write him anything by hand that takes him time to make out—that may leave him in doubt—that he can't easily read.

And don't fill out legal papers or card memos—or make out accounts or hotel menus in your own handwriting.

It looks bad, reflects on your standing, makes people think you can't afford a stenographer, and is sometimes ambiguous.

You can write out your letters—make out an abstract—fill in an insurance policy—enter your card memos—make out your accounts or a hotel menu—or do any kind of writing you need, on *any* kind, size or thickness of paper, and *space* any way you want on

You can write any of these things yourself if you do not happen to have a stenographer.

The OLIVER Typewriter

The Standard Visible Typewriter

For you can easily learn, with a little practice, to write just as rapidly, and as perfectly, as an expert operator on the OLIVER. Because the OLIVER is the *simplified* typewriter. And you can see every word you write. About 80 per cent, *more durable* than any other typewriter, because it has about 80 per cent. *less wearing points* than most other typewriters.

Eighty per cent. *easier* to write with than these other *complicated, intricate machines* that require "humoring"—technical knowledge—long practice and special skill to operate.

Than machines which cannot be adjusted to any special space—with which it is impossible to write abstracts, insurance policies, or odd-size documents except you buy expensive *special* attachments requiring experts to operate.

You can adjust the OLIVER to any *reasonable space*—you can write on *any* reasonable size and thickness of paper, right out to the very edge, without the aid of *any expensive attachment* or special skill, and your work will be neat appearing, legible and clear.

For the OLIVER is the typewriter for the doctor, the lawyer, the insurance agent, the merchant, the hotel proprietor—or any man who does his own writing.

Write us now for our booklet on the *simplified* features of the OLIVER

The Oliver Typewriter Company

310 Broadway **New York City, N. Y.**

INDEX TO ADVERTISERS.

American Roller Bearing Fifth Wheel Co..... 18
Auxiliary Spring and Ventilating Button Co..... 5

Barnes & Co., W. F. & John..... 18
Beckwith & Chandler Co..... 2
Bertram & Lamoreaux..... 20
Bimel-Ashcroft Mfg. Co.....3d cover
Bradley & Son, C. C..... 23

Carriage Opportunity 20
Central Bureau of Engraving..... 16
Columbus Bolt Works.....4th cover
Consolidated Rubber Tire Co..... 2
Cortland Forging Co..... 24
Crane & MacMahon.....2d cover
Crandal, Stone & Co..... 3

Dalzell Axle Co..... 21
Defiance Machine Works..... 17
Devoe, F. W., & Raynolds Co., C. T.....3d cover

Eagle White Lead Co..... 6
Eccles Co., Richard..... 19
English & Mersick Co., The..... 18

Fitch Gear Co..... 22
Flexible Shaft and Tool Co..... 6

Gerhab, Jacob..... 22
Gifford & Son, John A..... 23
Goodrich Co., B. F., The..... 5
Goodyear Tire and Rubber Co..... 4

Hankinson, J. V..... 18
Harland & Son, Wm..... 1
Hoopes Bro. & Darlington, Inc.....2d cover

Jones & Co., Phineas..... 15

Kalamazoo Tire Setter Co..... 19
Keystone Forging Co..... 21
Kiblinger Co., W. H..... 21
Kokomo Rubber Co.....4th cover

Landsman Motor Co..... 16
Landers Bros. Co..... 15

Masury & Son, John W..... 2
Maxwell & Fitch Co..... —
McKinnon Dash Co.....4th cover
Miller Bros..... 23

National Safety Fifth Wheel Co..... 15
National Spring and Wire Co..... 24
Nobles & Hoare..... 6
National Body and Box Co..... 21

Ohio Seat Co..... 23

Palm, Fechteler & Co..... 1
Peerless Buggy Top Co..... 24
Pomeroy & Fischer..... 6
Porter, H. K..... 23

Russell, Burdsall & Ward Bolt and Nut Co..... 22

Schacht Mfg. Co..... 18
Sheldon Axle Co..... 21
Smith & Co., Edw..... 4
Spring Perch Co..... 21
Standard Ball Axle Co..... 15
Standard Oil Cloth Co..... 17
Stein Double Cushion Tire Co..... 3
Strelinger Marine Engine Co..... 20
Studebaker Bros. Mfg. Co..... 3

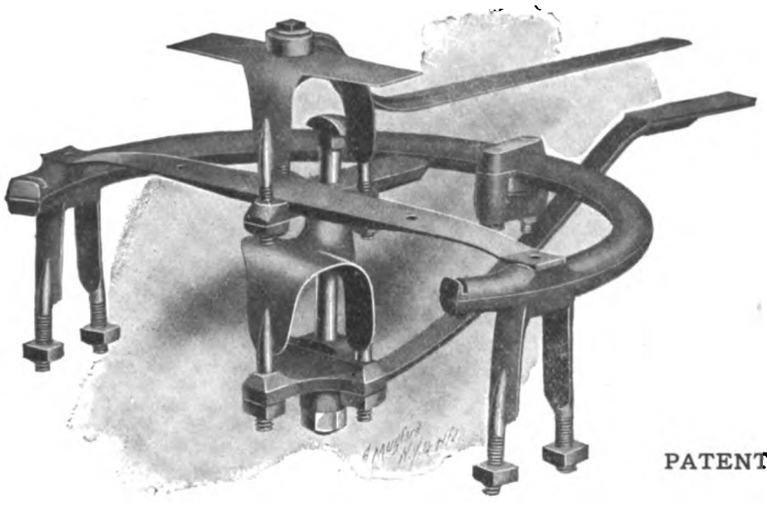
Timken Roller Bearing Axle Co..... 13

Valentine & Company..... 4

West Tire Setter Co..... 4
Wiese & Co., Wm..... 23
White, H. F..... 2
Wilcox Mfg. Co., D..... 15
Willey Co., C. A.....2d cover
Woodman, Joel H..... 15

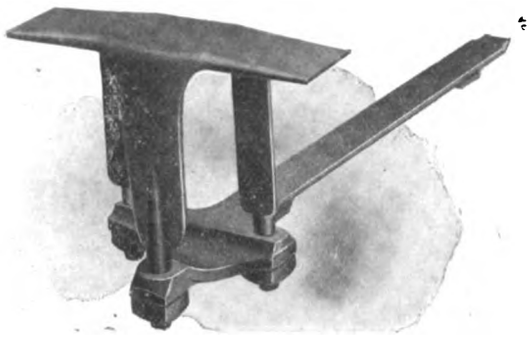
Zwick & Greenwald Co., The.....3d cover

Digitized by Google



No. 1902. Single Reach.

PATENTED.



No. 35½ and 41¾. Perch Heel.

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MFG. CO.

MECHANICSBURG, PA.

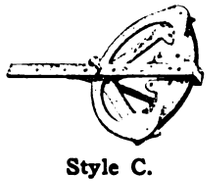
IT DOES THE TRICK R. F. D. SPECIAL



This axle runs easier than any other, and requires no attention. IT'S A WONDER Ask why. We can prove it.

STANDARD BALL AXLE WORKS, Lancaster, Pa.

National Safety
Short-Turning Fifth Wheels
Are Giving Universal Satisfaction.
Ask Your Dealer for Them.
National Safety Fifth Wheel Co., Lancaster, Pa.

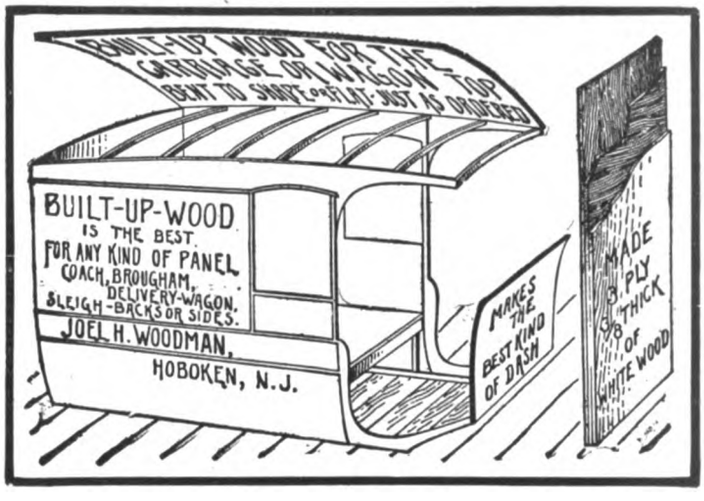


Style C.

Jones Wheels
BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.



LOWEST PRICES. *PROMPT SHIPMENTS.* *SUPERIOR QUALITY.*

TOLEDO **LANDERS BROTHERS CO.** **BOSTON**

We Are the Pioneers in the

SHEETINGS
WEBBING
32 Grades Single Double Three-Ply
BUCKRAM LINE
Four-Ply and Canvas Lined
DUCKS
WADDING

Celluloid Sheets, Enameled Muslins, Drills and Ducks

SCRIM. *RATTAN MOULDING.* *BATTS.* *OILED DUCK.* *OIL CARPET.*

Please mention "The Hub" when you write.

Digitized by Google

HOTEL CUMBERLAND

NEW YORK

Southwest Cor. Broadway at Fifty-fourth St.

Near 50th St. Subway and 53d St. Elevated Stations and accessible to all surface lines.



Headquarters for Carriage and Automobile Trade

Ideal Location, Near Theatres, Shops and Central Park.

NEW AND FIREPROOF

STRICTLY FIRST-CLASS IN EVERY RESPECT

All Outside Rooms. No Carpets. All Hardwood Floors and Oriental Rugs.

European Plan.

Transient Rates, **$2.50** with Bath, and up.

Restaurant Unexcelled. Prices Reasonable.

SEND FOR BOOKLET.

HARRY P. STIMSON, *Formerly with Hotel Imperial.*

R. J. BINGHAM, *Formerly with Hotel Woodward.*

Build Your Own Auto

A GASOLINE ENGINE TO FIT ANY BUGGY or WAGON

LANDSMAN MOTOR CO.

908 Hickory St. ST. LOUIS, MO.

Write for Catalogue.

MANUFACTURERS

DESIRING FIRST-CLASS ILLUSTRATIONS OF THEIR PRODUCT, AT REASONABLE PRICES, SHOULD PERMIT US TO SUBMIT AN ESTIMATE.

Central Bureau of Engraving

COMMERCIAL ENGRAVERS

157-159 WILLIAM STREET, NEW YORK

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

AXLES, ETC.

Dalzell Axle Co., South Egremont, Mass.
Sheldon Axle Co., Wilkes-Barre, Pa.
Standard Ball Bearing Axle Co., Lancaster, Pa.
Timken Roller Bearing Axle Co., Canton, Ohio.

BODIES, SEATS, ETC.

National Body and Box Co., Pontiach, Mich.
Woodman, Joel H., Hoboken, N. J.

BODIES IN THE WHITE.

Miller Bros., Amesbury, Mass.

BOLTS AND NUTS.

Columbus Bolt Works, Columbus, O.
Russell, Burdsall & Ward Bolt and nut Co., Port Chester, N. Y.

CARRIAGE CLOTHS.

Wiese & Co., Wm., New York City.

CARRIAGE FORGINGS.

Cortland Forging Co., Cortland, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

CARRIAGE HARDWARE.

Gifford & Son, John A., New York.

CARRIAGE GOODS.

Crandal, Stone & Co., Binghamton, N. Y.
English & Mersick Co., New Haven, Conn.
Gifford & Son, John A., New York.
Wiese & Co., Wm., New York.

DASHES, FENDERS, RAILS, ETC.

McKinnon Dash Co., Buffalo, N. Y.

ENGRAVING.

Central Bureau of Engraving, New York City.

FIFTH WHEELS.

American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
National Safety Fifth Wheel Co., Lancaster, Pa.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

FINISHED VEHICLES.

Schacht Mfg. Co., The, Cincinnati.
Studebaker Bros. Mfg. Co., South Bend, Ind.

JACKS.

Hankinson, J. V., Franklin, Ohio.

LAMPS.

Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

MACHINERY AND TOOLS.

Barnes Co., W. F. & John, Rockford, Ill.
Defiance Machine Works, Defiance, Ohio.
Kalamazoo Tire Setter Co., Kalamazoo, Mich.
Maxwell & Fitch Co., The, Rome, N. Y.
Porter, H. K., Everett, Mass.
Strelinger Marine Engine Co., Detroit, Mich.
West Tire Setter Co., Rochester, N. Y.

MISCELLANEOUS.

Bertram & Lamoreoux, Detroit, Mich.
Landers Bros. Co., Toledo, Ohio, and Boston, Mass.
Standard Oil Cloth Co., New York.

MOTORS, AUTO PARTS, ETC.

Kiblinger Co., W. H., Auburn, Ind. Mich.

ORNAMENTS.

Palm, Fechteler & Co., New York.

RUBBER TIRES.

Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, Ohio.
Goodyear Tire and Rubber Co., Akron, Ohio.
Kokomo Rubber Co., Kokomo, Ind.
Stein Double Cushion Tire Co., Akron, Ohio.

SHAFT COUPLINGS AND ANTI-RATTLERS.

Bradley & Son, C. C., Syracuse,
Eccles Co., Richard, Auburn, N. Y.

SPOKES.

Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.

SPRINGS AND GEARS.

Auxiliary Spring and Ventilating Button Co., Detroit, Mich.
Fitch Gear Co., Rome, N. Y.
National Spring and Wire Co., Albion, Mich.
Spring Perch Co., Bridgeport, Conn.

TOPS.

Peerless Buggy Top Co., Cincinnati, Ohio.

TRIMMING MATERIALS.

Stevens & Sackett Co., New Haven, Conn.

VARNISHES, PAINTS AND JAPANS.

Beckwith-Chandler Co., Newark, N. J.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Harland & Son, Wm., London and New York.
Masury & Son, John W., New York and Chicago.
Nobles & Hoare, London, England.
Pierce Co., F. O., New York City.
Pomeroy & Fischer, New York City.
Smith & Co., Edw., New York City.
Valentine & Company, New York, Chicago, Boston, Paris.
Willey Co., C. A. Hunter's Point, New York City.

WHITE LEAD.

Eagle White Lead Co., Cincinnati, Ohio.

WHEELS.

Crane & MacMahon, New York.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.
Rochester Wheel Co., Brockport, N. Y.
Zwick & Greenwald Wheel Co., Dayton, Ohio.

WHEEL STOCK, BENT WOOD, ETC.

Crane & MacMahon, New York.

Digitized by Google

"DEFIANCE"
WOOD-WORKING MACHINERY

Invented and Built by

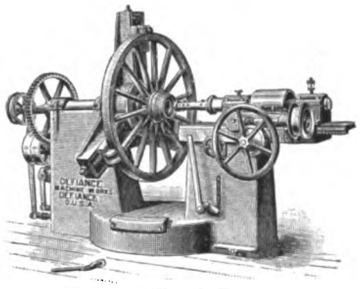
The Defiance Machine Works
Defiance, Ohio



12 in, Rim, Hound and Bow Bender

For Making

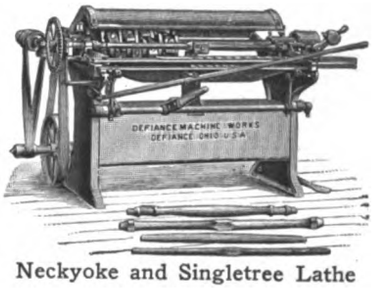
Hubs, Spokes, Wheels, Wagons, Carriages, Rims, Shafts, Poles, Neckyokes, Singletrees, Hoops, Handles of all Kinds, Insulator Pins, Bobbins, Spools, Table Legs, Oval Wood Dishes and for General Wood Work.



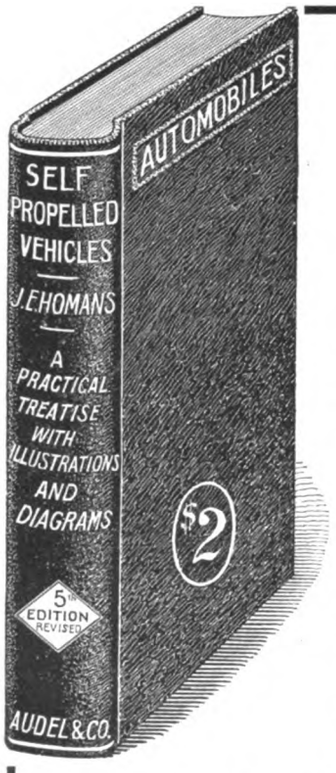
No. 2 Wheel Boxer



No. 1 Knife Balancing Machine



Neckyoke and Singletree Lathe



"Self-Propelled Vehicles"

Fifth Edition, Revised.

A practical treatise on the theory, construction, operation, care and management of all kinds of Automobiles.

By

JAMES E. HOMANS, A.M.

Contains 608 pages and upwards of 500 illustrations and diagrams, giving the essential details of construction and many important points on the successful operation of the various types of motor carriages driven by steam, gasoline and electricity.

This work is now the accepted standard, explaining the principles of construction and operation in a clear and helpful way. This book will be sent postpaid to any address in the United States, Mexico or Canada upon receipt of $2.00.

Address

TRADE NEWS PUBLISHING COMPANY

24 Murray Street, New York

MERITAS

CARRIAGE ENAMELED **OIL CLOTH**



MERITAS is made from **real oils.** It won't crack or peel, because it **can't.** The trade mark guarantees it **perfect.**

Standard Oil Cloth Co.

320 Broadway, NEW YORK.

Digitized by Google



A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.

The Invincible Schacht

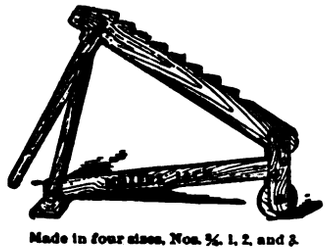
A WONDER IN A HUNDRED WAYS



MODEL K.

The simplest, most practical, efficient and economical car ever built. Sixteen h.p.. Friction Drive. Any speed up to thirty miles per hour. All parts interchangeable and thoroughly "getatable." Large wheels with cushion tires overcome all tire troubles. Almost noiseless and rides like a pneumatic. The greatest selling proposition on the market. Live agents wanted everywhere. Prompt deliveries and thorough satisfaction guaranteed. Send at once for catalogue, etc., and be convinced.

The SCHACHT MFG. CO., Cincinnati, O.



Made in four sizes, Nos. ¾, 1, 2, and 3.

JACKS FOR BUGGIES AND WAGONS

Miller Patent Wagon Jack Made by

J. V. HANKINSON,

Successor to THOS. MILLER,

FRANKLIN, OHIO.

Write for particulars and prices.

Fall Work

Your orders for Fall work will soon be coming in. We have been preparing for this business since last December. New lines of Locks and other Hardware, fresh Trimmings and Fittings, genuine horn goods, new styles in compact, serviceable Toilet Cases, etc., for closed or semi-enclosed jobs—all of which we are prepared to make up and ship promptly.

We manufacture and job the most extensive and complete line of high-grade carriage and Automobile Hardware, Trimmings and Fittings in America.

Samples and quotations whenever you say the word.

The English & Mersick Co.

Winchester Avenue

New Haven - - - Connecticut

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.

745 THIRD AVE., BROOKLYN, N. Y.

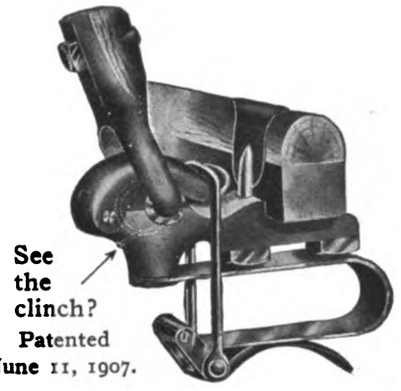
Digitized by Google

ECCLES BALL-BEARING COUPLINGS

The cut shows our coupling bolted to axle, and the form our flat leather bushing takes when the shafts are placed and locked in the coupling. The leather can be securely fastened in by the user, by driving a soft wire nail through the small hole we drill, which clinches it.

When the shafts are removed, the bushing does not come out, but stays in the Coupling where it belongs. NO LOST BUSHINGS WHEN YOU USE OUR COUPLINGS.

We would like to send you our circular and have you try our Couplings. They will save you money.



Patented June 11, 1907.

Patented Nov. 25, 1902.

The spring is pivoted at the front so that it can be turned forward out of the way of the wrench while clipping the Coupling to the axle.

These are two of the good points, but there are plenty more desirable features in our Couplings.

We also have a Catalogue showing our full line of CARRIAGE and WAGON FORGINGS, all of which we make

RICHARD ECCLES COMPANY, AUBURN, N. Y.

THE KALAMAZOO TIRE SETTER

Made for hand or power. Cut shows power machine.

Weighs 1275 Lbs.

Will set all tires from light buggy tires up to wagon tires 3 x3-4.

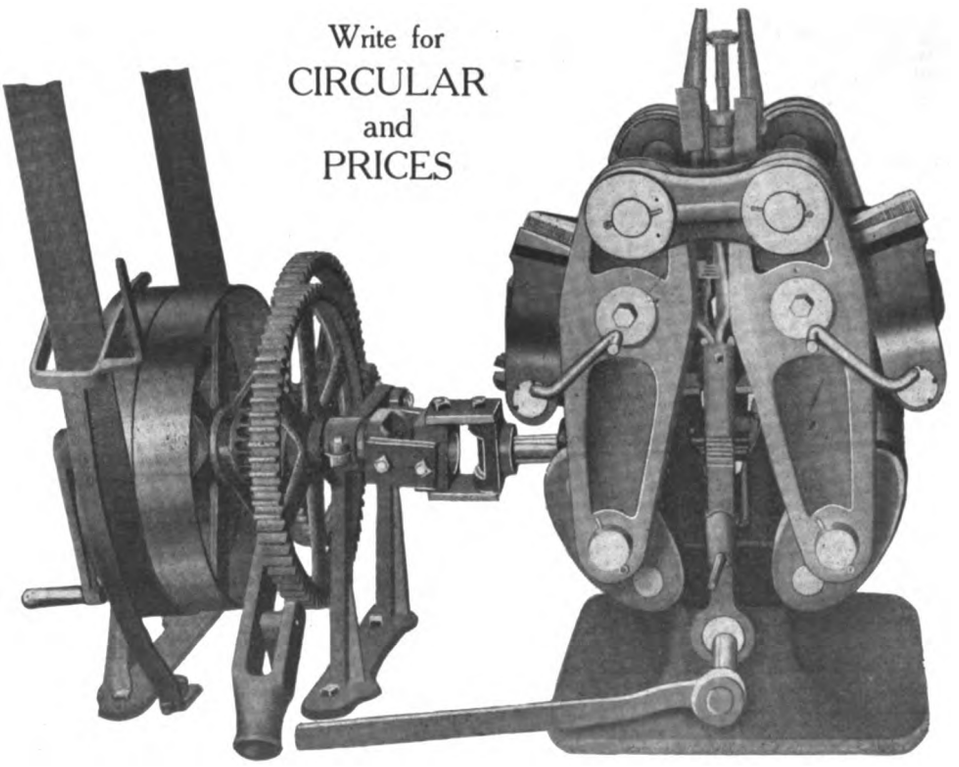
Will set

20 Tires Per Hour

Almost indestructible.

Will not break or wear out.

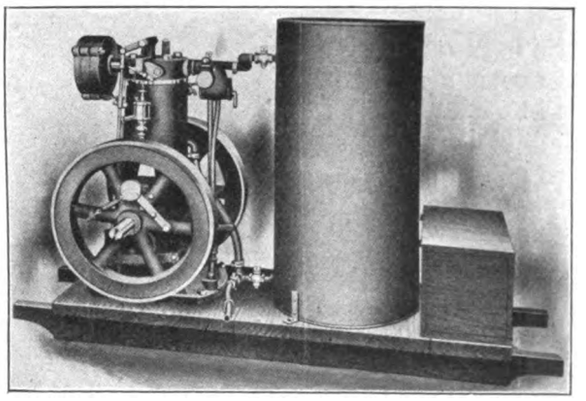
Write for CIRCULAR and PRICES



KALAMAZOO TIRE SETTER CO., Kalamazoo, Mich.

Digitized by Google

"THE STRELINGER"



Let This Motor Run Your Shop--Only One Cent an Hour per H. P.

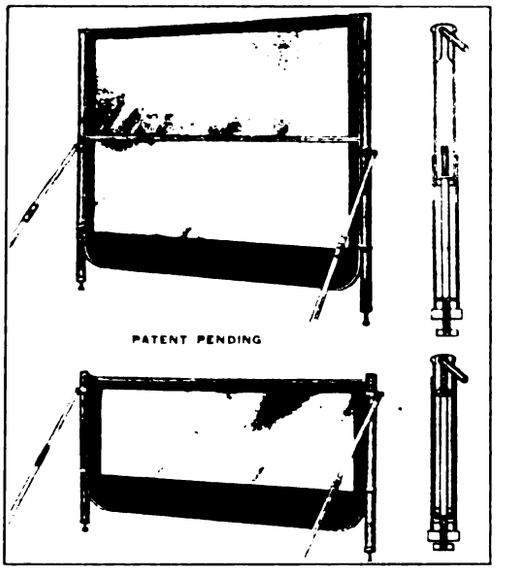
You start it in the morning and it will run 'till night without any attention. Stop and start at your pleasure. Your power is always ready. Strong and steady. This motor will be a source of comfort and satisfaction to you. Send for catalog, and learn more about our STRELINGER ENGINES. One to fifty horse-power.

THE STRELINGER MARINE ENGINE CO.

Dept. Hub, 46 Congress St. E., Detroit, Mich.

TELESCOPE WIND SHIELDS

WILL NOT RATTLE



This Wind Shield embodies all the good qualities, eliminates all the defects, embraces all the advantages possible in a wind, dust or rain protector—all we claim, and the proof is apparent. Made by

Bertram & Lamoreaux

72 East Fort Street **DETROIT, MICHIGAN**

The Hub A Technical Journal for the Carriage and Automobile Trades.

Each number contains Fashion Plates of the very latest styles of Vehicles with dimensions and descriptions for building. Published monthly at $2.00 per year. Foreign subscriptions, $3.00. Sample copy sent on request.

Harness Leading Publication of the Saddlery Trade.

One of the handsomest trade journals published. Profusely illustrated. Invaluable to harness makers and dealers who want to be in the lead. Published monthly at $1 00 per year for the United States and $1.50 for foreign subscriptions.

American Harness and Saddlery Directory

Contains a complete list of the trade of the United States and Canada. Price, $4.00.

THE TRADE NEWS PUBLISHING CO.

24-26 Murray St., NEW YORK CITY.

CARRIAGE FACTORY

Proposition of a Lifetime!

To settle an estate, one of the finest carriage plants in the country can be purchased at advantageous prices and liberal terms. Located in heart of a very substantial Western city. Good will second to none on heavy and light carriages and custom automobile body work.

This is a **going concern** and **will continue to be operated,** but as the principals are women this **rare opportunity arises.** Factory about 90 x 113 feet, five stories and full sized basement. Brick and stone construction. Nothing finer of its kind in United States, and complete in every department. Plant, machinery, merchandise and good will; or will sell machinery, merchandise, good will, and lease the factory on favorable rental. Greatest bargain ever offered to the carriage public. In operation over fifty years, and will continue whether sold or not. In great manufacturing city of about 50.000 population.

For price sand terms, address

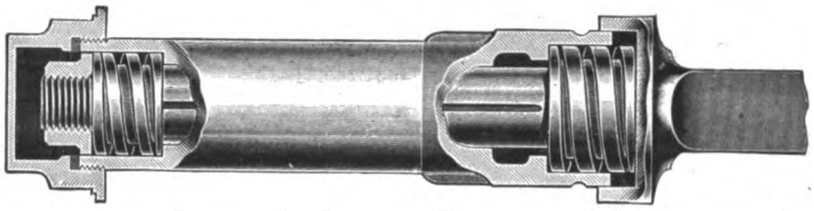
CARRIAGE OPPORTUNITY,

Care The Hub, 24 Murray St., New York City.

Please mention "The Hub" when you write.

Digitized by Google

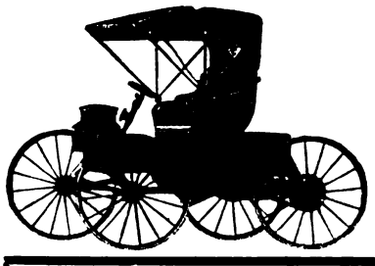
PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

DALZELL AXLE CO., South Egremont, Mass.



GET THE AGENCY
MOTOR VEHICLES

11 H. P., $375.00. 13.6 H. P., $450.00.

Air Cooled; Double Cylinder; Solid Rubber Tires. Thirty miles on one gallon of gasoline. Thirty miles per hour. Fully Guaranteed. **Ask for Catalog 80.**

W. H. KIBLINGER CO., Auburn, Ind.



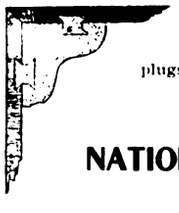
Axles

A complete line of Wagon and Carriage Axles—Common, Concord, Farm Wagon, Half Patent, Long Distance, Collinge and Mail Patent. Empire Ball Bearing Axles. Made only by

SHELDON AXLE COMPANY, Wilkes-Barre, Pa.

Springs

The Best and Easiest Riding Springs, for both Light and Heavy Vehicles. We have had very great success with our Automobile Springs : : : : : :



Plugless Piano Bodies

Corners absolutely tight and can not open. No plugs to work out or show through the varnish.

This body sells buggies.
Wouldn't it pay you to use it?

NATIONAL BODY & BOX COMPANY
PONTIAC, MICH.

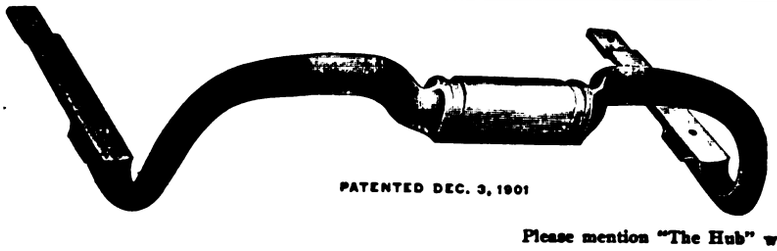
DON'T TRUST TO LUCK
ADVERTISE IT IN
THE HUB

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges
EXCLUSIVELY FIRST-CLASS WORK
THE BEST THAT CAN BE MADE

SPRING PERCH CO.
BRIDGEPORT, CONN.



PATENTED DEC. 3, 1901

THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland Pa.

Please mention "The Hub" when you write.

Digitized by Google



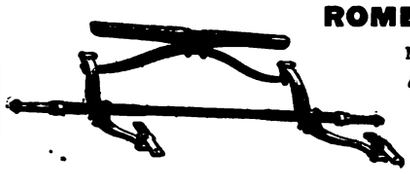
BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.

FITCH GEAR CO.

ROME, N. Y., U. S. A.



Manufacturers of over

40 STYLES of GEARS

From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.

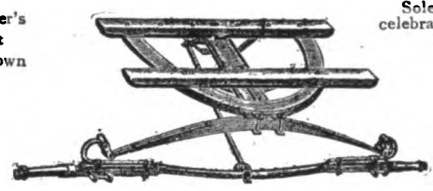
Sole Manufacturers of the celebrated

Kramer Lowdown

Short Turn Gear

It is the Finest Gear for Drop Centre-Body for Milk, Bakers' or Butchers' Wagons on the market.

Send for our No. 22 Catalogue, just out.



Kramer's Patent Lowdown Gear.

C.H.A.T.

Helps Secure Situations.

Carriage, Harness and Accessory Traveling Salesmen's Association

OF THE UNITED STATES.

All Commercial Travelers in Above Lines Eligible. No Others. Pays Death Benefits.

Membership Fee, - - - $3.00

Annual Dues, - - - - 1.00

Employers of Traveling Men eligible to join as associate members on payment of $5.00, and are exempt from all further dues.

Manufacturers of carriages, harness or goods that enter into their construction, jobbers of same, can secure good, reliable and efficient salesmen through our Association, as the members of this Association have the best facilities for knowing all about men who are seeking situations, and none will be recommended unless they are first class and worthy of support.

Salesmen in need of a situation, or manufacturers in need of a salesman, address for further information,

L. H. KRONFELD, Secretary.

Box 57, Mount Vernon, N. Y.

HOTEL WESTMINSTER

Irving Place and 16th Street

NEW YORK CITY.



One block from **Union Square**, Surface, Elevated and Subway Cars. Midway between leading **Wholesale** and **Retail Stores** and **Theatres**, and yet far enough from Broadway to insure **Comfort** and **Freedom** from the noise and bustle of that thoroughfare.

Perfectly Quiet Locality and **Home-like** in every respect.

EXCELLENT CUISINE, EUROPEAN PLAN.

Single Rooms, $1.00 per day and up. Room with Bath, $2.00 per day and up. Parlor, Bedroom and Bath, $3.00 per day and up.

SEND FOR BOOKLET.

O. H. FOSTER, Proprietor.

Headquarters for "The H. D. Smith & Co.'s" Carriage and Wagon Forgings

JACOB GERHAB

DEALER IN

Carriage Cloths, Leathers and Trimmings, Wagon and Cart Material

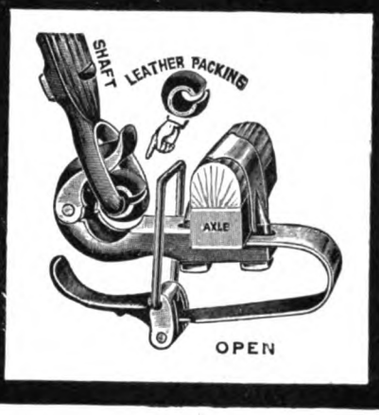
Salable prices and all information cheerfully furnished

158, 160, 162 and 164 North Third Street

PHILADELPHIA, PA.

Digitized by Google

THE BRADLEY SHAFT COUPLING



OPEN

Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1½ in. in section.

C. C. BRADLEY & SON, Syracuse, N. Y.



CLOSED

JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

MILLER BROTHERS

Builders of

CARRIAGES

IN THE WHITE

AND

Automobile Bodies

AMESBURY, MASS.

THE OHIO SEAT CO.

Manufactures PANEL SEATS

STICK SEATS of every description.

Also Canopy Frames, Cushion Frames and Buggy High Backs. Up-to-date Equipment. Write for Quotations.

1964-1966 CENTRAL AVE., CINCINNATI, O.

H. K. PORTER
BOLT CLIPPERS
27 YEARS EVERETT.
27 YEARS MASS., U.S.A.

WM. WIESE
With Hardt, Von Bernuth & Co.
Since 1883.

WM. WIESE & CO.

ALBERT MAERTENS
With Hardt, Von Bernuth & Co.
Since 1894.

Formerly Carriage Goods Department of HARDT, VON BERNUTH & CO.

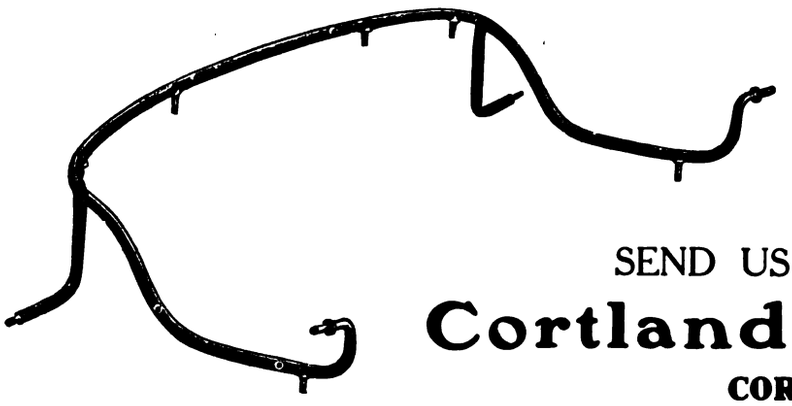
Carriage and Automobile Linings and Livery Cloths

Sole Agents in the United States for
WULFING'S CARRIAGE CLOTH AND EL DE BARAN GOATSKIN.

66-68 Greene St., New York

Please mention "The Hub" when you write.

Digitized by Google



WE MAKE

Buggy Auto Seat Shifting Rails

OF ALL DESCRIPTIONS

SEND US YOUR PATTERNS.

Cortland Forging Co.

CORTLAND, N. Y.

Peerless Buggy Top Co.

MANUFACTURERS OF

AUTOMOBILE AND BUGGY TOPS

Backs, Cushions and Storm Aprons.

And all Kinds of CARRIAGE TRIMMINGS. **CINCINNATI, OHIO.**

Journal for the Carriage and Automobile Trade

The Hub

Published Monthly at Two Dollars per Year

Our Carriage or Spring Edge Cushion Frame



Is not an Experiment, but has been tried and stands the test.
We would like to quote you prices.
NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

Carriage Mechanics

Desiring to improve their present Condition should attend the

TECHNICAL SCHOOL

FOR

Carriage Draftsmen and Mechanics

SUPPORTED BY THE

Carriage Builders' National Ass'n.

The object of the School is to teach men to design vehicles and make working drawings, and to otherwise facilitate their work in the shop. Only those men employed in carriage or automobile building or their accessory trades are admitted to its privileges.

The classes are conducted in three divisions, viz.: Corresponding, Day, and Evening. The former is open during the entire year, while the day and evening classes are in session only from October 1st to April 1st.

The tuition is moderate.

For prospectus and full particulars, write to the instructor,

ANDREW F. JOHNSON,
18 West Forty-fourth St.,
NEW YORK CITY.

Please mention "The Hub" when you write.

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

C. T. RAYNOLDS & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

Bimel-Ashcroft Manufacturing Company

Main Office, POPLAR BLUFF, MO.

Factories:
POPLAR BLUFF, MO.
MOREHOUSE, MO.
DERMOTT, ARK.
LOUISVILLE, MISS.

Foreign Correspondence Solicited.

SPOKES

OUR GROWTH

1902—1,310,241 Spokes

1903—3,240,185 Spokes

1904—5,485,748 Spokes

1905—7,845,653 Spokes

1906—7,927,759 Spokes

1907—7,748,839 Spokes

Our New Plant Increases Our Capacity to 12,000,000 Spokes

The ZWICK & GREENWALD WHEEL CO.

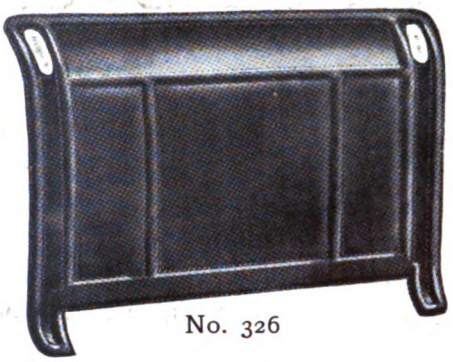
Dayton, Ohio

MAKERS OF

HIGH GRADE VEHICLE WHEELS
SARVEN PATENT COMPRESSED BAND HUB
AND STEEL SHELL BAND WHEELS

WE MAKE A SPECIALTY OF TIRING WHEELS **WRITE FOR PRICES**

Digitized by Google



No. 326

WING DASHES

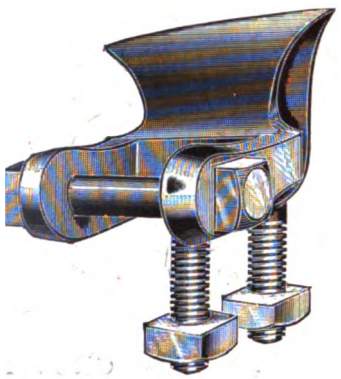
Will be in greater demand in 1908 than ever. Be with the leaders by showing them in your new catalogue.

McKinnon Dash Company

Cincinnati, Ohio
Troy, Ohio

Buffalo, N. Y.

St. Catharines
Ontario



Skewed Shaft Couplings

FOR

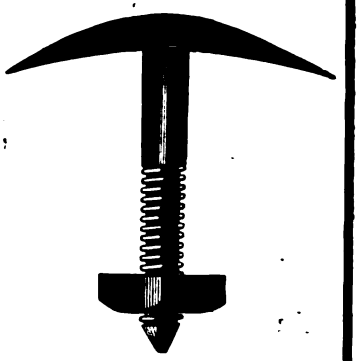
High Arched Axles

Furnished in Rights and Lefts for Any Height of Arch.

Bolts, Nuts, Washers, Carriage Hardware and Special Forgings

1908 Catalog "H" on application.

COLUMBUS BOLT WORKS, Columbus, O.



KOKOMO TIRES

SEEING, they say, is believing, but in Rubber Tires the surface appearance does not count. The story of "Kokomo" Tires has always been one of **feeling.** It presents the only true method of arriving at the real merits of a tire.

Pure Rubber is an important part of the "Kokomo" compound. You don't have to ask the man on the box if they give complete satisfaction—he tells you so.

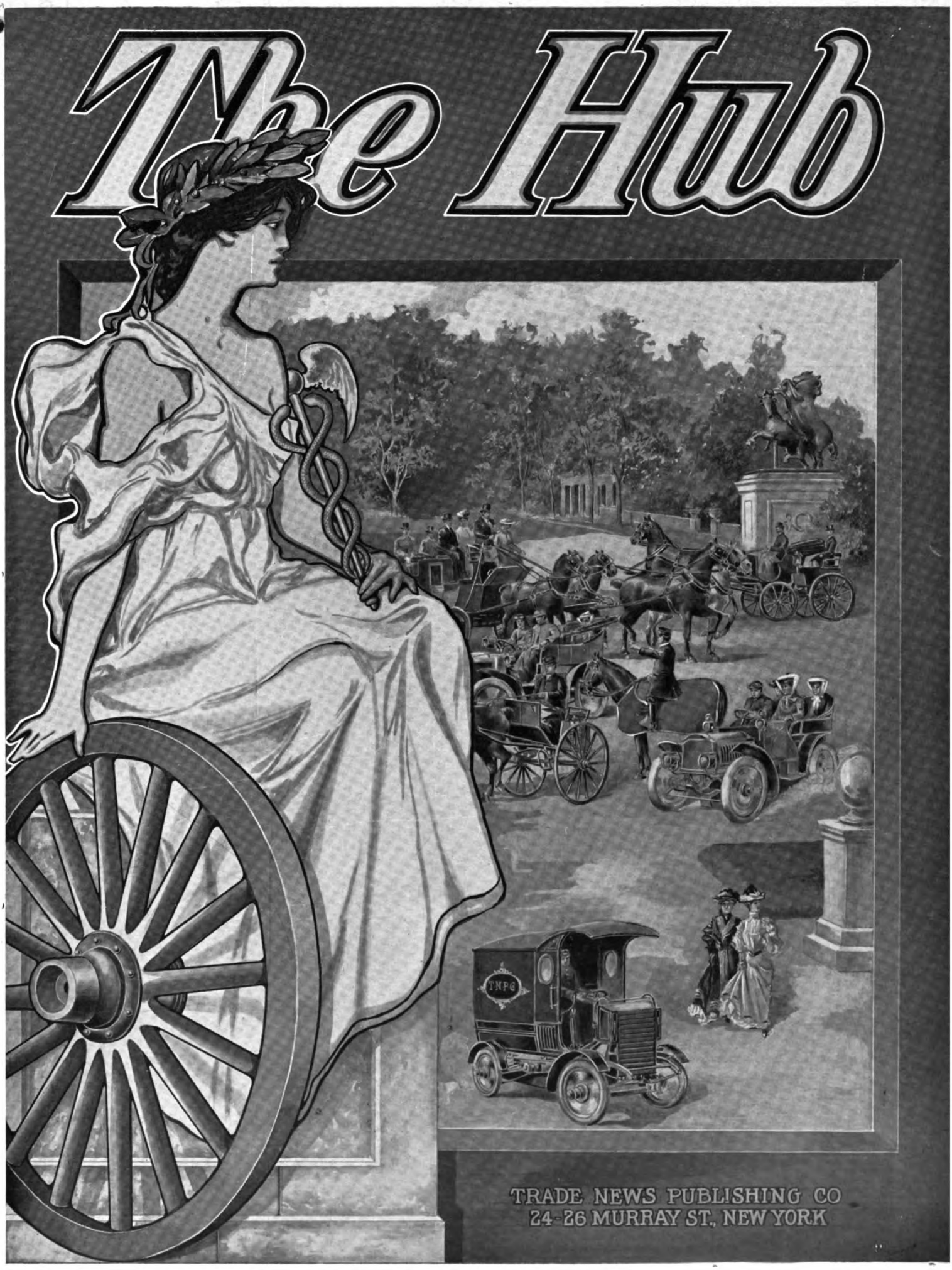
"Kokomo" always for comfort and long service.

Kokomo Rubber Company

Kokomo, Indiana, U. S. A.

Digitized by Google

The Hub



TRADE NEWS PUBLISHING CO
24-26 MURRAY ST., NEW YORK

Vol. L., No. 4. JULY, 190

Digitized by Google

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

C. A. WILLEY COMPANY

Color Grinders

AND MANUFACTURERS OF

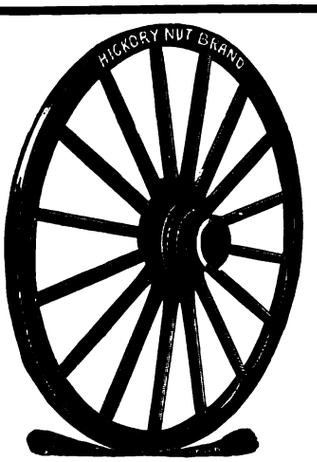
SPECIALTIES IN CARRIAGE and CAR PAINTS, COLORS, Etc.



92d St. Cars at Hunter's Point Ferry Pass our Factory.

Hunter's Point, New York City

CALL AND SEE US WHEN IN NEW YORK.



CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

HEAR YE!
HEAR YE!
HEAR YE!

All ye who labor in the Finishing Rooms of the Carriage and Automobile Industries! The best wearing and most beautiful and lasting finish is obtained by the use of

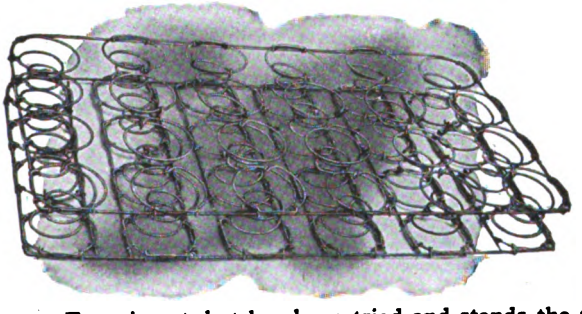
HARLAND'S ENGLISH VARNISH



The merits of Harland's Varnishes are backed by over a century of progress, and it is the unsurpassed quality of this varnish which has not only given the makers a universally pre-eminent position, but has also made it the standard by which all others are compared.

WM. HARLAND & SON
168 CENTER ST.
Factories: Merton, London S. W., England. NEW YORK

Our Carriage or Spring Edge Cushion Frame



Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.
NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

TRANSFER DECORATIONS

Save Time, Permit of More Elaborate Display and Facilitate Production.

Wise Wagon Builders Know the Value of the "Decalcomanie" Both for Lettering and Ornamentation.

Scrolls, Figures, Flowers, Letters, Animals, Stripings, Numerals, Corners, Special Name Plates of All Descriptions, Buggy Ornaments in Sets.

No shop is complete without our catalog. Send for one.

Palm, Fechteler & Co.,
NEW YORK: 67 5th Ave. CHICAGO: 43-45 La Salle St.
MONTREAL, E. LIVERPOOL, O.

PEERLESS BUGGY TOP CO. CINCINNATI·OHIO

Peerless Buggy Top Co.

MANUFACTURERS OF

AUTOMOBILE AND BUGGY TOPS

Backs, Cushions and Storm Aprons.

And all Kinds of CARRIAGE TRIMMINGS. **CINCINNATI, OHIO.**

Please mention "The Hub" when you write.

Digitized by Google

JOHN W. MASURY & SON

MANUFACTURERS OF

Superfine Coach Colors
:: :: and Varnishes :: ::

NEW YORK and CHICAGO

WHITE'S BRAZING SLEEVES

[redacted] MANUFACTURED BY [redacted]

H. F. WHITE, 111 E. Pearl St., Cincinnati, O.

"Mighty to Wear"

Beckwith-Chandler Company

Manufacturers of High-Grade

COACH AND RAILWAY VARNISHES

NEWARK, N. J. 201 EMMETT STREET

NEW YORK 320 FIFTH AVENUE

"Lasting Satisfaction"

Kelly-Springfield

It's There All Ways



The Tire of Fashion Comfort and Service

Consolidated Rubber Tire Co.

NEW YORK

Factories: AKRON, OHIO

Digitized by Google

E. & M. QUALITY

Is the result of fifty-five years of persistent effort to buy the best and sell the best. Quality pays. It always has and it always will. On that foundation is built this business—and it can truthfully be said, without boasting, that this is the representative house of America in its line. -:- -:- -:-

Automobile and Carriage Hardware, Trimmings and Fittings.

The English & Mersick Co.

NEW HAVEN, CONN.

Carriage Mechanics

Desiring to improve their present Condition should attend the

TECHNICAL SCHOOL

FOR

Carriage Draftsmen and Mechanics

SUPPORTED BY THE

Carriage Builders' National Ass'n.

The object of the School is to teach men to design vehicles and make working drawings, and to otherwise facilitate their work in the shop. Only those men employed in carriage or automobile building or their accessory trades are admitted to its privileges.

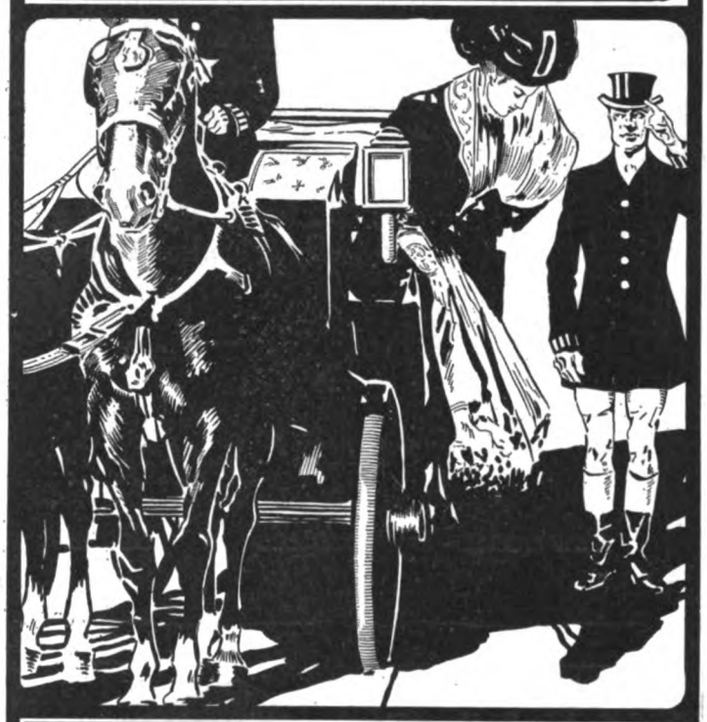
The classes are conducted in three divisions, viz.: Corresponding, Day, and Evening. The former is open during the entire year, while the day and evening classes are in session only from October 1st to April 1st.

The tuition is moderate.

For prospectus and full particulars, write to the instructor,

ANDREW F. JOHNSON,
18 West Forty-fourth St.,
NEW YORK CITY.

STEIN DOUBLE CUSHION TIRE





Patented 1892-1902.

DOUBLE CUSHION

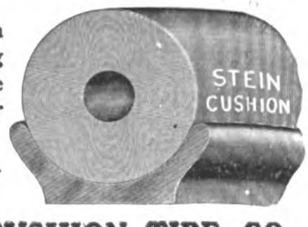
is no mere name or fancy, but an established and recognized fact in connection with the

STEIN DOUBLE CUSHION TIRE

Seeing, they say, is believing, but to appreciate the double cushion reality existent in our tires—ride over them. What was previously an idea then becomes an establshed fact.

The Stein Double Cushion Tire will be a big talking point in your 1908 line. Be wise and get next to our proposition.

The most serviceable rubber tire on earth.



STEIN DOUBLE CUSHION TIRE CO.
Akron Ohio

Digitized by Google

Varnish

is a good servant, but a bad master.

Lawson Varnish

has been made a good servant by experience, care in preparation, and adapabilitty to good and bad conditions.

Lawson Medium Drying Body Varnish

dries dust free in eight to ten hours, and is the same quality as Lawson Wearing Body, only it hardens more quickly. Perfect for finishing coats.

VALENTINE & COMPANY

TRADE VALENTINES VARNISH MARK

NEW YORK CHICAGO BOSTON PARIS AMSTERDAM TORONTO

WING
RUBBER CARRIAGE TIRES



are made from tough, durable, lively New Rubber. QUALITY is the first consideration. Our "Wing" Tire will outwear several ordinary rubber tires. The wings (see cut) keep water, sand and grit from working between the channel and the tire, to wear out the tire from underneath. Write for particulars.

GOODYEAR TRADE MARK.

The Goodyear Tire & Rubber Co.
Carriage Tire Dept.
Akron, Ohio

BRANCHES: Boston, New York, Buffalo, Chicago, Cincinnati, Detroit, St. Louis, Denver, Los Angeles, San Francisco.

81 Years' Experience in Every Can

E.S. 1827 & CO.

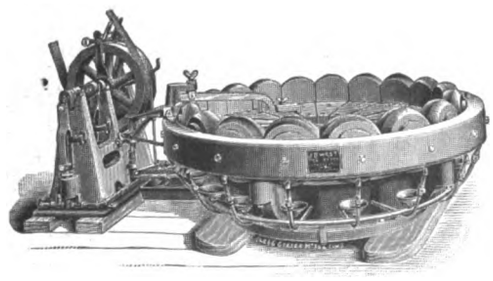
Edward Smith & Co.

Red, Green and Black Color Varnishes

New York
45 BROADWAY

Chicago
3532 SOUTH MORGAN ST

THE FIRST TIRE SETTER



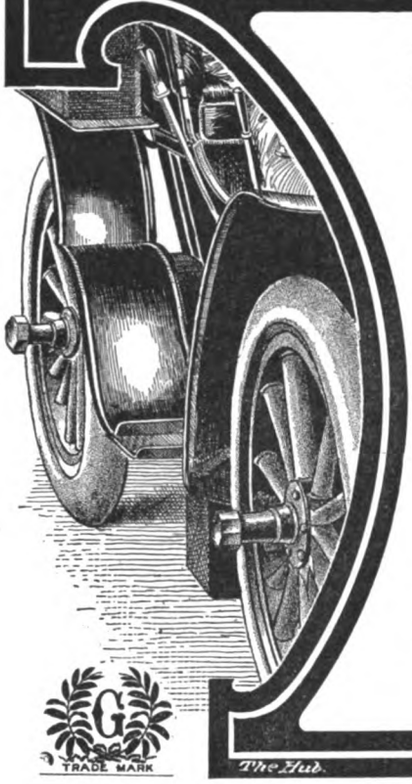
you ever heard of was a **"WEST"**—probably, for they were on the market several years before any other and you are hearing more about them every year. Many of the older users are loudest in their praise. That's because they stand the test of time—they're made that way. Some of our Hydraulic machines have been **in use fourteen years** and are doing as good work now as when first installed. **Now,** we don't claim our machines are best simply because they have been longest on the market, **but because** we have been making a study of cold tire setting all these years and improving our machines as experience and observation taught us, and when you buy a **"West Hydraulic"** you get the benefit of this experience. Some people knowing **our** machines would set tires cold satisfactorily, thought some other would do as well—and the price was cheap —also machine. Now they wish they had bought a **"West Hydraulic." If you make a similar mistake it's your own fault.**

Buy a **"West Hydraulic"** and be happy. Hand or Power machines.

THE WEST TIRE SETTER COMPANY, Rochester, N. Y.

Digitized by Google

GOODRICH TIRES



How to Get Along to the Best Advantage

USE **GOODRICH TIRES**

Goodrich Solids for the horse-drawn pleasure vehicle.

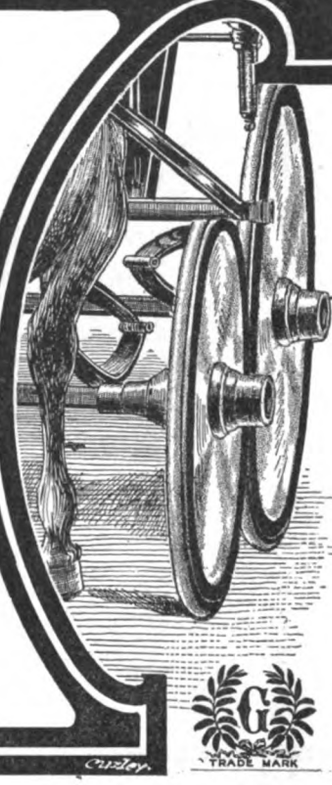
Goodrich Pneumatics for the motor car.

THE B. F. GOODRICH COMPANY
AKron, Ohio

Philadelphia, 1332 Arch St. — *Chicago*, 24 E. Lake St.
Detroit, 266 Jefferson Ave. — *Boston*, 161 Columbus Ave.
St. Louis, 3926-28 Olive St. — *Cleveland*, 2188 Ninth St. S. E.
Denver, 1536 Glenarm St. — *San Francisco*, 50-60 Fremont St
Seattle, 310 First Ave. S. — *Los Angeles*, 818 S. Broadway.
London, 7 Snow Hill, E. C.

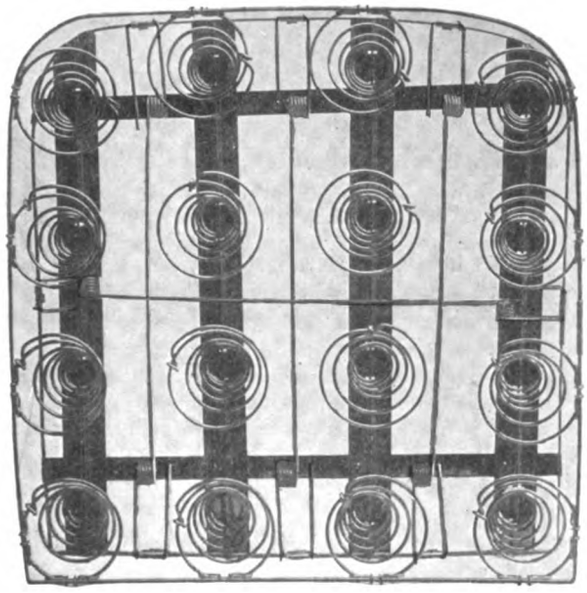
Our products are also handled in
New York, 66-68 Reade St. — *Buffalo*, 731 Main St.
by The B. F. Goodrich Company of New York.

No. 2 Rue Brunel, Avenue de La Grande Armee, Paris, France.



TRADE MARK TRADE MARK

ROYAL ARCH AUXILIARY SPRINGS



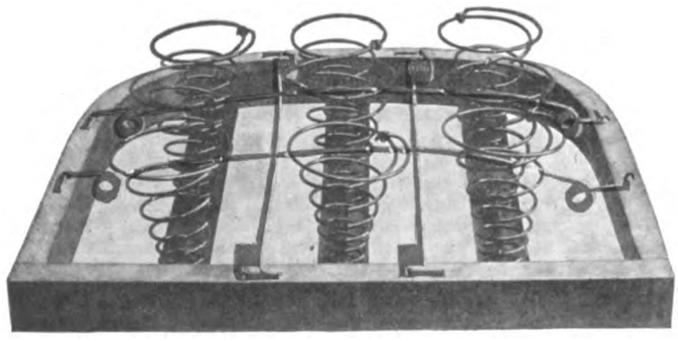
Soft Face Construction. Patented.

Auxiliary Spring & Ventilating Button Co.
DETROIT, MICH.

ROYAL ARCH AUXILIARY SPRINGS prevent the complete depression of the coiled springs, relieve the coils of the severe shocks, and greatly lengthen the life of the cushion. A cushion with Royal Arch Springs will never sag, and

FORTIFIES THE RIDER AGAINST THAT SUDDEN UNEXPECTED JAR

Will cost no more than the common construction. Why? Write us.

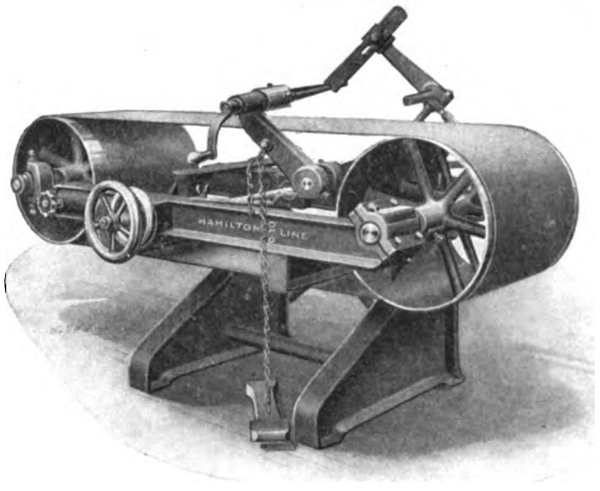


Wood Frame Construction. Patented.

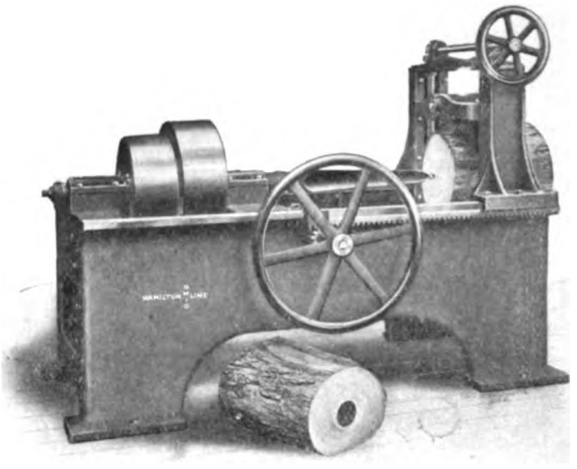
Digitized by Google

HAMILTON (OHIO) LINE WOOD WORKING MACHINERY

For Automobile Body and Wheel Work, Carriage and Wagon, Hub, Spoke, Rim and Wheel Factories



Hamilton Spoke Belt Sander No. 304.



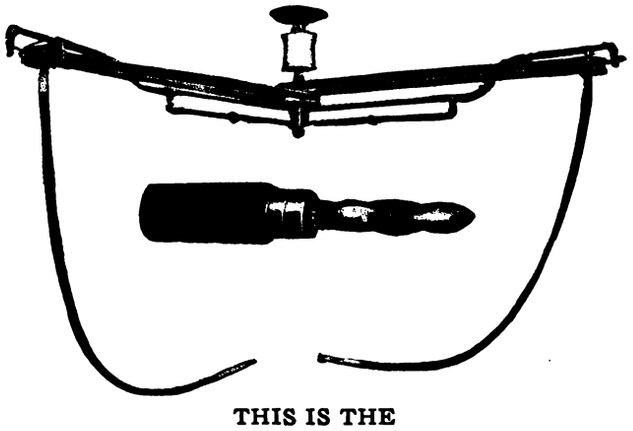
Hamilton Hub Boring & Reaming Machine No. 317.

Disk Sanders, Belt Sanders, Spoke Sanders, Wheel Sanders, Gear Shapers, Scroll Eyeing Machines, Gear Rounders, Spring-Bar Boring Machines, Seat-Back Benders, Rim Planers, Rim Rounders, Rim Borers, Rim Cut-Off Machines, Wheel Boring & Screw Driving Machines, Spoke Lathes, Spoke Cut-Off Saws, Spoke Tenoning and Mitering Machines, Spoke Throaters, Spoke Facers, Wheel Facers, Wheel Tenoners, Hub Lathes, Hub Mortisers, Hub Borers, Wheel Boxers, Wheel Presses, Tire Truers, Tire Bolters, Spoke Cut-off Machines, Band Saws, Rip and Cross-cut Saws, Planers, Matchers, Moulders, Shapers, Boring Machines, Universal Wood Workers, etc., etc., etc.

THE BENTEL & MARGEDANT CO., Hamilton, Ohio, U. S. A.

There Are Others

BUT NONE SO GOOD



THIS IS THE

RADIAL BORING MACHINE

THAT GIVES SATISFACTION.

SPECIAL PATENTED PLUG BIT AND OTHER ATTACHMENTS IF DESIRED.

STEEL LINK CORE, STRONG AND DURABLE

PRICES:

Double Arm Machine, with Chuck.....$85.00
Single Arm Machine, with Chuck..... 65.00
A Discount of 15 per cent. when cash accompanies order

The Flexible Shaft & Tool Co.

BELLEFONTAINE, OHIO.

INDEPENDENT OF ALL COMBINATIONS

The Eagle White Lead Company's

"EAGLE" BRAND OF "OLD DUTCH PROCESS" WHITE LEAD

ALSO "EAGLE" RED LEAD, LITHARGE AND ORANGE MINERAL

Our **Special Coach and Carriage White Lead** is the best white lead on the market for this class of work.

We claim for our **"Eagle" Red Lead** that, for Durability, Color, Texture, Covering and Spreading Properties, it is not excelled by any red lead in the world. It requires more pure linseed oil to the hundred pounds, and when properly mixed it will not settle. It is the best foundation coating for vehicles known.

New York—54 Maiden Lane
H. C. Russell, *Manager*
Philadelphia—1901 Callowhill St.
Baltimore—447 North St.
Geo. O. Shivers, *Manager*
Buffalo—Builders' Exchange
A. S. Goltz, *Manager*
Pittsburg—
Pittsburg Paint Supply Co., *Agts.*
Cleveland—
The Hale & Holmes Co., *Agents*
Chicago—125-127 N. Peoria St.
E. B. Bennett, *Manager*
St. Louis—405a Benoist Bldg.
B. P. Temmeyer, *Manager*
Kansas City—
W. R. McDonald, *Agent*
New Orleans—
Jno. R. Todd & Bro., *Agents*
Dallas—Jack H. Frost,
Agent for State of Texas

Eagle White Lead Co., Cincinnati, Ohio

Please mention "The Hub" when you write.

Digitized by Google

The Hub

Copyright, 1908, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. L. NEW YORK, JULY, 1908. No. 4.

THE TRADE NEWS PUBLISHING CO. OF N. Y.

Publishers of THE HUB

J. H. Wright, *President.* G. A. Tanner, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

Jacob H. Klein, *Technical Editor.*

REPRESENTATIVES:

J. Henry Klune. J. G. Tanner. B. H. Hull.

The Hub is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of Trade News Publishing Co.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

France.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

Germany.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

England.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

The Coming C. B. N. A. Convention.

In the long career of the C. B. N. A. annual conventions were missed two or three years on account of business depressions. It is not easy to reconcile these failures because the carriage builders do not meet to sell carriages or to talk commercial business. But still, the hard times prevented the conventions.

It does not appear at this time that there will be any diminution in attendance this year at Chicago—to say nothing of no convention. It is fortunate that the convention is to be held in Chicago this year. The west has not had a convention for some time and wants it. The west has not been struck so hard by the panic as the east. Chicago is nearer the geographical carriage building center. It stands for the popular vehicle business, the buggy trade, the cheaper carriage.

Besides business is not so bad in the west. Big crops and good prices are heralded. The western builders can be relied upon to turn out in full force. They will be in the band wagon. If they have not done as well as they might have done there will be no squealing—no long faces.

The southern builders should, and no doubt will, return the compliment of the visit made a couple of years ago. They have felt the pinch during the past year but when they come to Chicago they will catch the spirit of enthusiasm which counts for something in any and every struggle.

The Pacific Coast interests and the Rocky Mountain states people will have the opportunity of showing by their presence that the association of which they are a part has a place in their hearts.

The eastern builders and the vast accessory interests which are located east of the Alleghanies will not miss the opportunity of shaking hands with their western brothers. Things are brightening and the convention at Chicago will be a most thoroughly representative one.

A Decision on Routing Freight.

Manufacturers, and this sometimes means carriage builders as well, have been obliged to pay railroad charges on a roundabout route instead of on a straight route. Some railroad managers, in fact, very many, claim the right and privilege to ship freight or to route freight just as they please, regardless of the increased cost of freight. This has been the occasion of much friction between shippers and railroad men in years past. A recent court decision lays down the common sense principle of law that a railroad company has no right to ship by a roundabout way if there is a direct and cheaper way. A case was recently brought by a shipper who was charged a large additional amount for a roundabout routing. The shipper gained his case, and the judge read the railroad men a lecture to the effect that they had no right under the law to route goods just as they pleased irrespective of cost.

This decision will do good. There is considerable injustice done to shippers by this indefensible railroad practice. Shippers have a right to enjoy the advantage of the shortest line from point of shipment to termination. The railroads have paid very little attention to this right, and have fallen into the habit of sending shipments as they saw fit.

Body Construction.

While the designers of carriages have less than ever to do with the designing and construction of business vehicles, which includes delivery wagons and that large class of vehicle work used for business purposes, the superintendents of many of our carriage factories are introducing improvements in body construction of a practical and every-day character, which the average designer never thinks of. In fact, there are improvements in progress in vehicle construction with which the draftsman has almost nothing to do, and with which the practical mechanic has almost everything to do. Much attention is being given to the strengthening of the body of the general business wagon, such as is used in our cities and towns for a great variety of purposes in the transportation of goods and supplies. These improvements apply chiefly to the vehicles used by tradesmen who employ carts, trucks and wagons in their business. They meet

Digitized by Google

the demands for wear and tear better, and they aim to guard against such weaknesses as result from the carrying of heavy loads or sudden pressures. While these minor improvements appear to be trifling, and involve the use of a little more iron or a better framing or a strap, bolt or a cross-bar where it is particularly needed, or additional side supports where they are needed, the sum total of these little modifications is giving the trade a decidedly stronger wagon body and one which will meet every probable demand made upon it.

The demand for this class of vehicle is steadily increasing. In years past perhaps too little attention has been given to the minor details of body construction, but within the past year, especially, the shop mechanics have put their wits to work and have brought out a number of little twists and turns and additions which are giving to their wagon bodies a compactness and a strength to resist wear and tear which marks a decided improvement in this branch of the industry.

Warranty.

A little ball has started rolling in relation to warranty. Two or three carriage builders have already withdrawn their warranty and, if reports are correct, they are doing a somewhat larger rather than a smaller business. A concern which has the nerve to withdraw its warranty has high confidence in the quality of its work and in its hold on its trade. Warranty has come to mean very little, because trade custom has established a rule of conduct which neither warranty nor the lack of warranty can disturb. The two or three who have started the ball will find others following in their footsteps. The establishment which sells its goods without warranty has a stronger and a higher motive to turn out good work than the concern which guarantees.

Warranty sometimes creates as much trouble as it saves. Warranty makes owners of vehicles more careless of their vehicles than they otherwise would be, or, at least, there is a tendency that way. "Fill her up, she's warranted," simply means that because of warranty a vehicle is sometimes and often made to stand more strain and carry a heavier load than it was intended to carry. No one knows this better than the carrriage builders. Warranty is an invitation to carelessness and abuse. Many owners of vehicles are sufficiently careless without having any additional motive furnished them. This warranty question will settle itself, and the underlying influences will probably lead more builders to follow the pioneers who have tossed warranty aside.

Light Carriage Hardware.

A word or two is due the manufacturers of light carriage hardware and of the numerous odds and ends which find their artistic places on and in the carriage. The improvement in shape and appearance of locks, and fasteners and in the entire line of supplies coming under the heading of light carriage hardware, deserve at least a passing mention. The better appearing workmanship has an American "cast" about it and if any suggestions are taken from abroad they are thoroughly modified along American lines.

The builders of carriage hardware, both light and heavy, have done their part well in the steady improvement of their multiplied products along artistic lines, as well as in the virtual revolution of their shop equipment within a period of perhaps ten years. The introduction of special tools and machinery has become general and the facilities of doing first class work were never as complete.

Would Brew Trouble.

If workmen could enter labor organizations and retain their individuality and act as their best judgment dictated, and not be overawed by "leaders," there would be no harm in organization. But it appears that connection with a labor organization means the surrender of individual judgment. This is the great fault of American trades unionism. The statement has been made that the American Federation of Labor is endeavoring to organize the carriage and wagon building workmen. If this means, as it usually does, that the carriage and wagon building workmen are to surrender their own judgment and do as somebody else directs, it would be an unfortunate step for both workmen and employers.

Wages have been advanced in the industry by natural causes, and wages are high. It does not appear that this movement at organization has come from the workmen themselves. They had never had any difficulty in obtaining redress or fair treatment. They do not need an organization of any kind for that purpose. They are not oppressed, and they know that when they have occasion to confer with their employers that they are uniformly dealt with as men, and their just claims and desires have always been granted.

Standardizing Wagon Parts.

The occasion for a long list of variations in sizes of parts entering into carriage and wagon construction has long since departed. Carriage building was long ago standardized into simplicity. The wagon builders have been slower to realize the value of standardization of parts, but they had difficulties to surmount of a peculiar sort. There are standard wheels and tires for carriages, standard lengths and diameters of hubs, and standard lengths of gears and standard sizes of every small part which enters into vehicle construction.

The wagon builders are traveling along the same road and with the power of organization behind them, can more readily secure the adoption of standards as soon as common consent can be had. The great wagon builders have already solved the problem for themselves and have made possible a general standardization of parts based on experience and necessity.

The conditions confronting the various kinds of wagons built are, for each kind, practically the same, hence the practicability and necessity for a similarity of parts.

Influence of Trade Organizations.

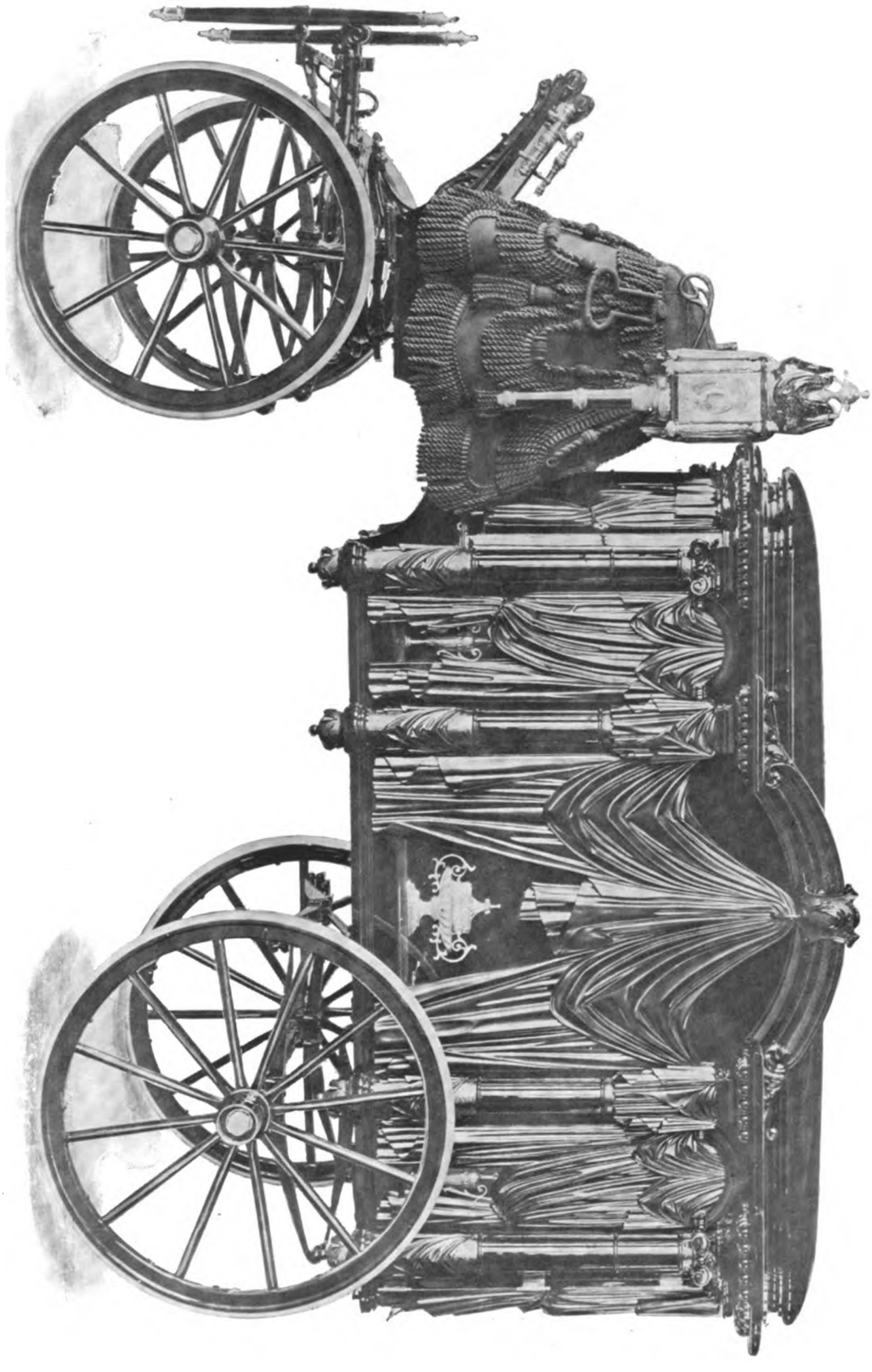
The success which has attended the negotiations had this year with the traffic bureaus prove the value of, and the absolute necessity of, trade organizations. The Russian peasants say of their Czar, "The Little Father is good, but he is far away." So the carriage builders might say, the railroad traffic managers are good, but they are far away, until brought close by the form of organized numbers.

The railroad people always pay respectful attention to any well-backed protest or complaint, and, as a rule, very little attention to any other. Their traffic managers are too busy with ever recurring questions growing out of the complexity of modern transportation methods to stop, look and listen to anything they are not obliged to.

The judgment of merit and demerit is intimately connected with the judgment of good and evil.

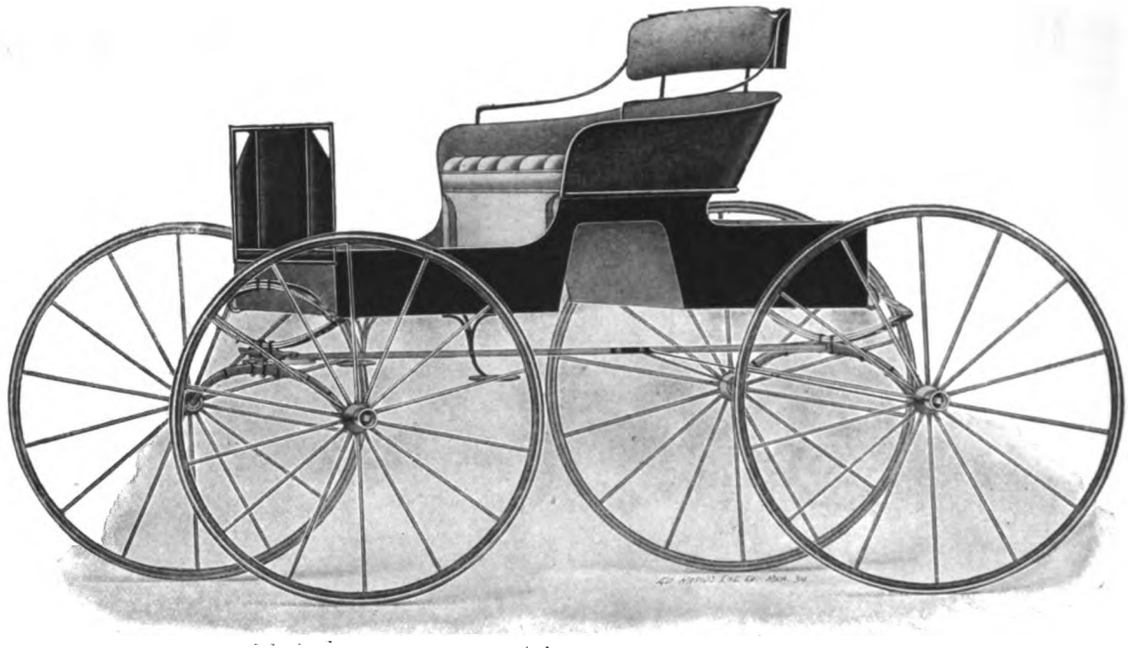
Digitized by Google

Illustrated Carriage Section, July, 1908.

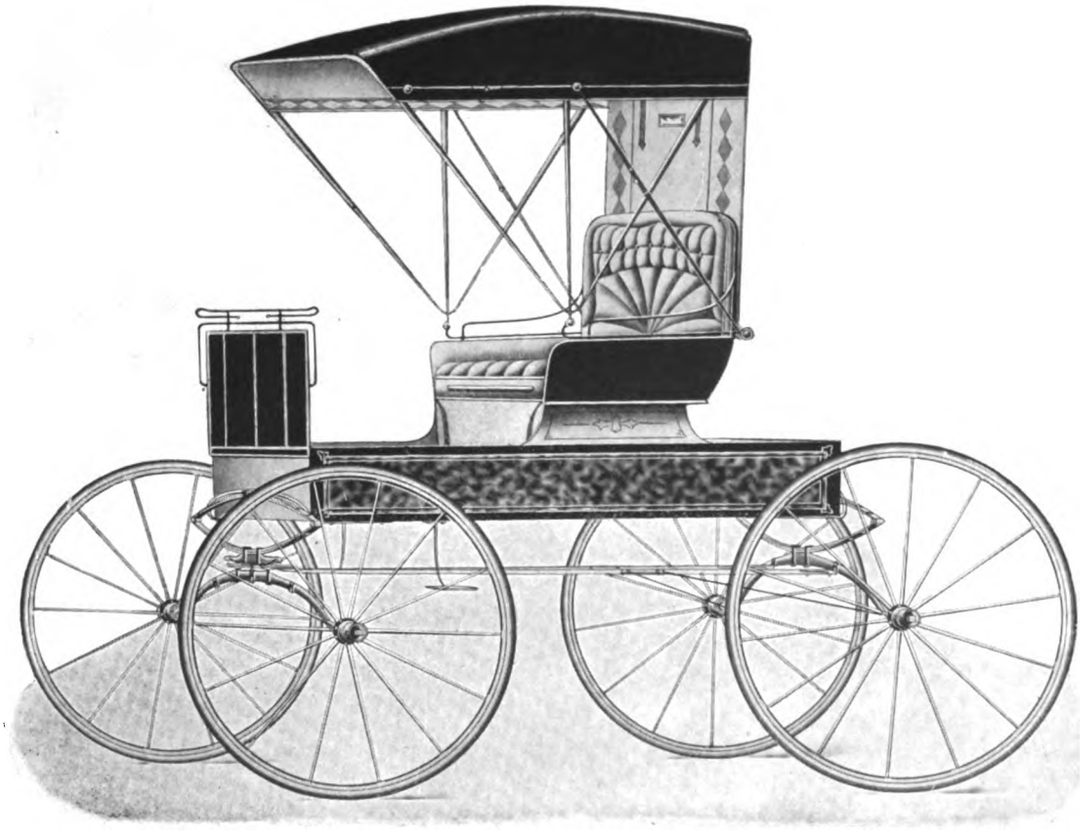


Funeral Car with Hammercloth and Carved Draperies.
Built by James Cunningham, Son & Co., Rochester, N. Y.

Digitized by Google

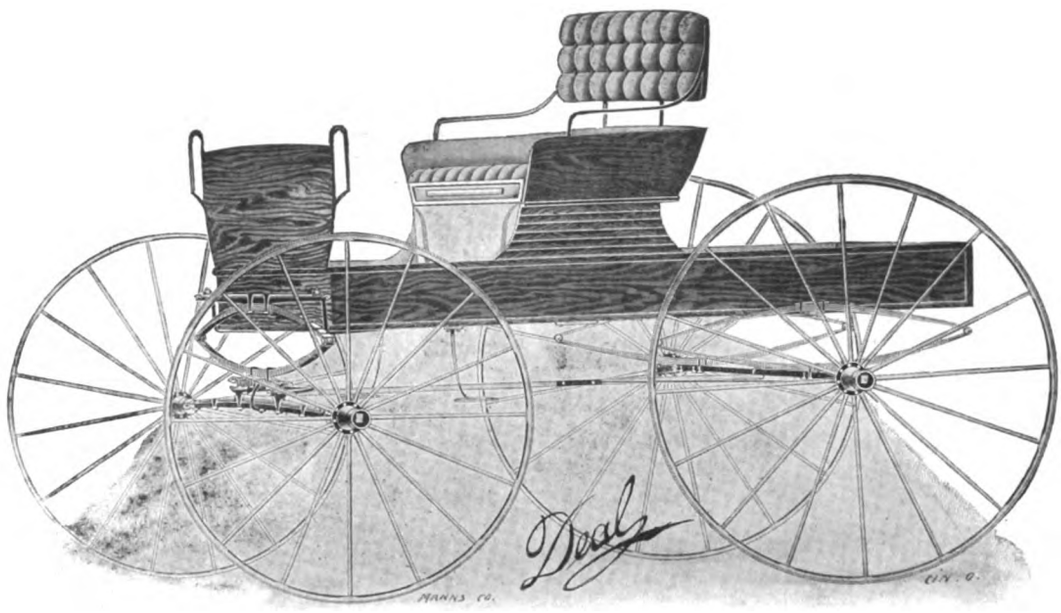


Elliptic Spring Cutunder Wagon.
Built by The Barnett Carriage Co., Cincinnati, Ohio.

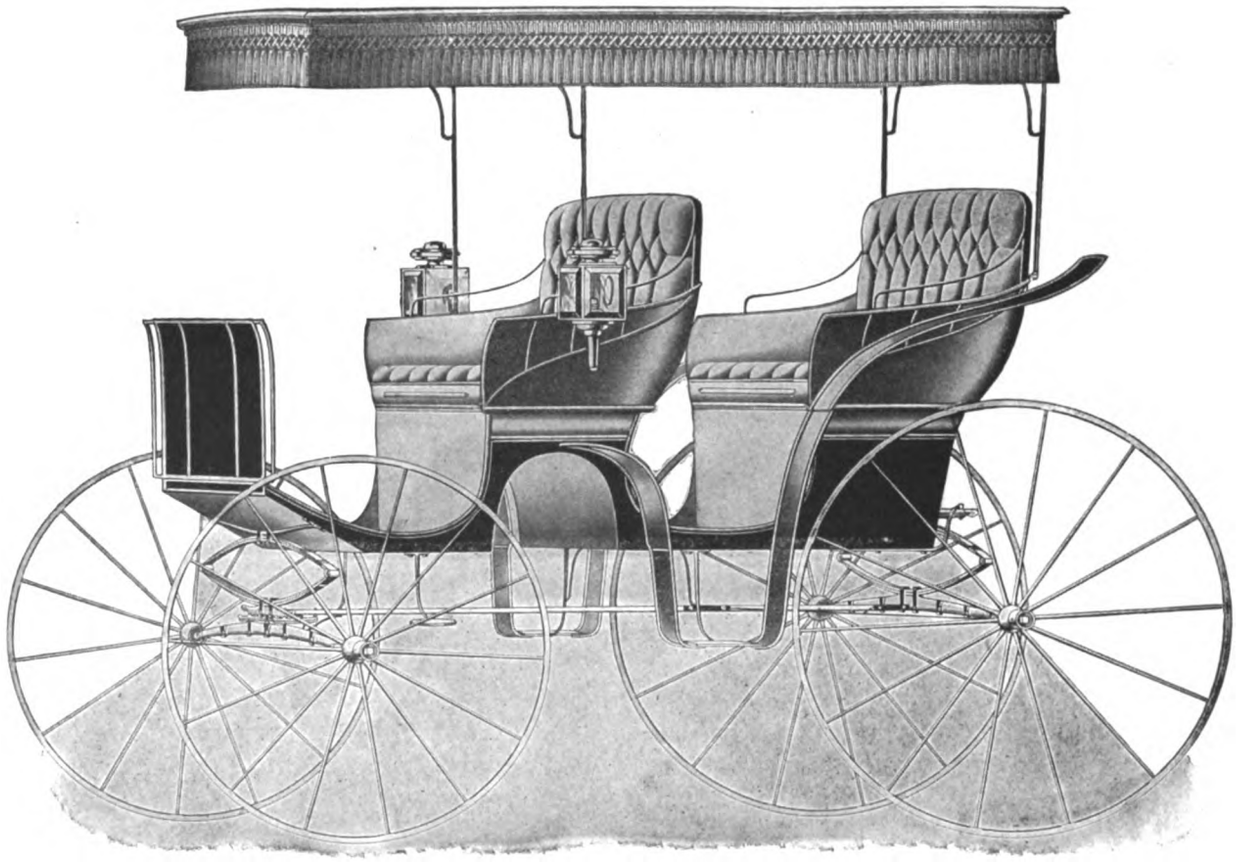


Fancy End-Spring Top Buggy.
Built by Delker Bros. Buggy Co., Henderson, Ky.

Digitized by Google

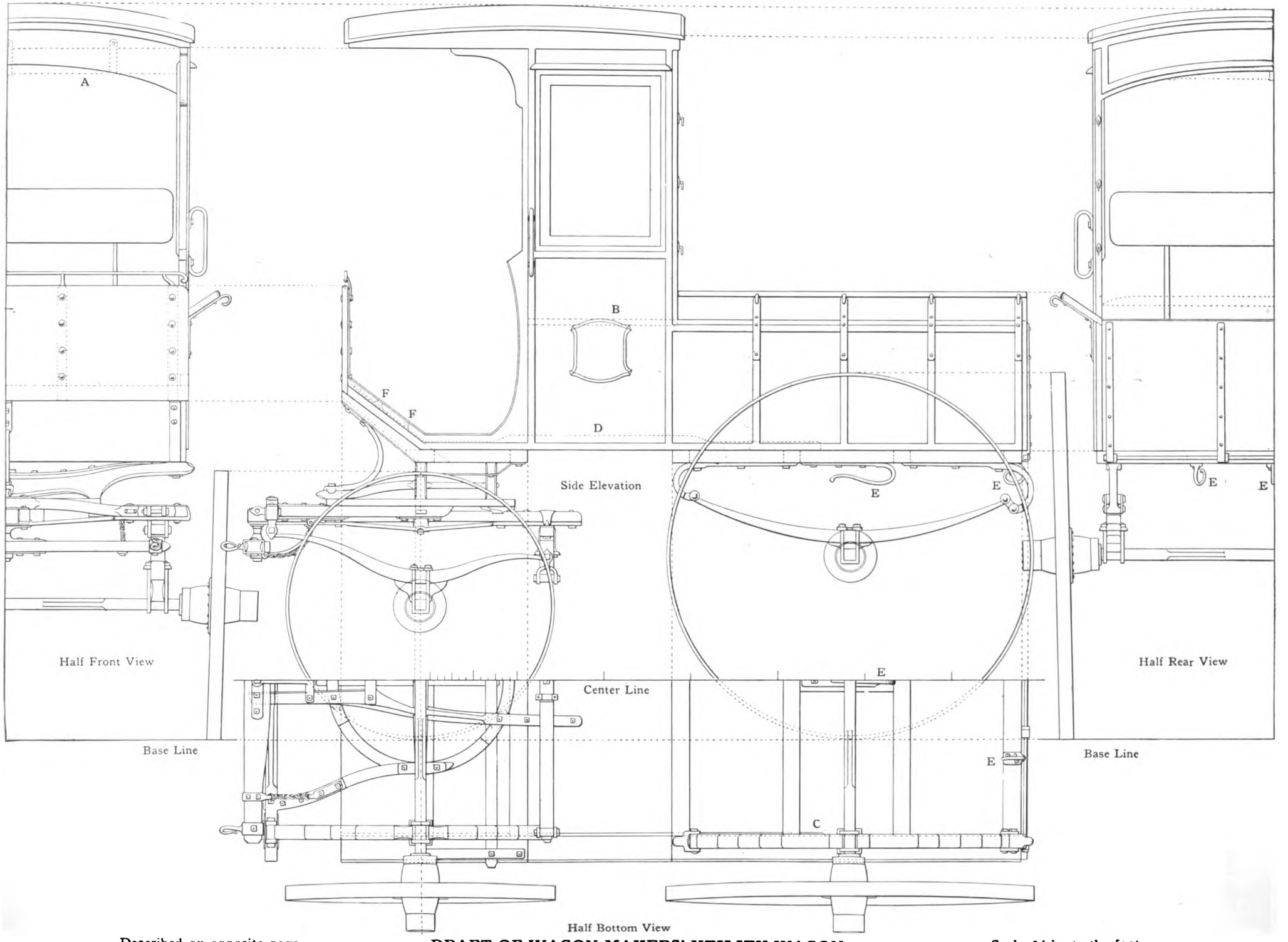


Park Wagon with Natural Wood Finish.
Built by J. J. Deal & Son, Jonesville, Mich.



Cutunder Canopy-Top Surrey.
Built by Anderson Buggy Co., Anderson, Ind.

Digitized by Google



Described on opposite page.

DRAFT OF WAGON MAKERS' UTILITY WAGON.

Scale, ¾ in. to the foot.

Digitized by Google

Wood-working and Smithing

DESCRIPTION OF WAGON MAKERS GENERAL UTILITY WAGON.

Drawing on opposite page.

The working draft of wagon appearing on opposite page has many commendable and attractive features. This wagon which is in the service of the Geo. Irving Co., wagon manufacturers, of New York City, is not only used for towing wagons, in need of repair to the shop, or delivering new ones, but it is also capable of fulfilling other duties about the factory.

The body is built on square lines and therefore easily constructed. A light is provided at the sides, which is stationary but so secured that it may readily be removed if desired, An oiled duck curtain, which rolls up on the inside of back panel of top as shown by dotted lines at A. protects the driver. The roof is boarded with 2½ in. wainscoating and has 3 in. swell across body. Seatboard, shown by the dotted lines B, is secured to cleats which are screwed to sides.

A frame of 1¾ in. oak, with side sills 3¼ in. wide and crossbars 2¼ in. wide forms the rocker portion of the body. Upon this frame the 1 in. by 2½ in. sills are secured. A 7-16 in. rocker plate extends from point C to toebar of body. At point D the sill is increased in thickness to 2 in. doubling the width of the plate at the cutunder.

The main side panels are ¾ in. thick and screwed from the bottom to the sills, there being no frame work, strap bolts 1 in. x 1¼ in. on inside of body are, however, provided. Dashboard is ¼ in. thick. The tailboard, which is a plain board of ash ⅞ in. thick, closes inside of body panels, it is secured with ordinary express link and chain on inside of body.

On the underside of the body are bolted hooks as at E in side elevation, bottom and rear views, to which a pole or pair of shafts may be tied. F.F. are two 1 in. x ¼ in. plates which act as foot-rails and are bolted to the rockers.

Dimensions of the body are: Length overall 7 ft. 11 in.; width outside of panel 49½ in.; depth of rear panel outside of mouldings, 17½ in.; panel in front 27½ in. deep outside of mouldings. Moldings are 1 in. x ⅜ in.

Dimensions of gear are: Wheels, Sarven patent, 36 in. and 50 in. in diameter; spokes front and back 1⅝ in. rims 2 in. deep. Tires are 2 in. x ½ in. steel. Track of wheels is 5 ft. Axles, Timken roller bearing type, are 1½ in. front and rear. The front gear is standard platform style, with 26 in. roller bearing fifth wheel.

Suspension is platform front and half elliptical back. Front side springs are 36 in. long, center to center of eyes, 5 plates, 2 in. steel; cross spring is 42 in. long, 5 plates, 2 in. steel. Rear springs are 43 in. long, 6 plates 2 in. steel.

Painting is: Body express green, mouldings black fine lined on the edge, with yellow. The ornamental medallion in center of front panel is painted carmine and is used for large monogram of owners initials. Gear is red striped with a heavy line of black and fine-lined with white. Lettering should be in gold.

A box the length of width of interior of body and about 9 in. deep and 15 in. wide, is carried under the driver's seat for use of blacksmiths tools to be used when necessary.

THE BALANCING OF SPRINGS IN PLATFORM HANGING.

Illustrations accompanying.

In the hanging of carriages, where the distribution of the weight is partially on a platform bearing, and where the weight is resting unequally upon the platform, as is the unavoidable practice in hanging the hind part of broughams and landaus upon five springs, equal distribution of weight must be intelligently worked out. In good coach making, balance is thoroughly grasped, and the pliancy of the springs strengthened and lengthened in proportion to the weight carried at their different bearings.

The drawing, Fig. 1, shows a section of the hind part of a brougham, hung upon five springs. The length of the half elliptic is confined to the position of the wheel, to the opening

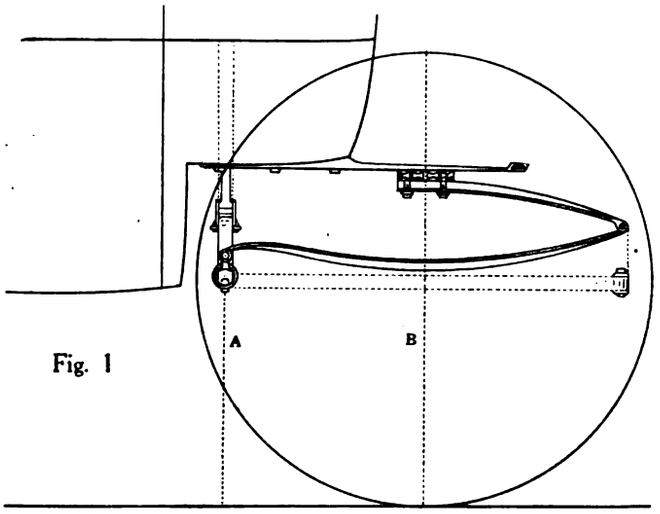


Fig. 1

of the door, and sometimes to the design of the body at the bottom of the pillar, at the back of which the cross spring is fixed.

The points upon which a carriage is suspended are the front and back axle, the weight on these points varying in proportion to their position to the weight passing through them. There is more weight borne by the front undercarriage, because of the nearness of the driver's seat and the front seat of a double brougham, or a landau to the front axle; these combinations throw a greater stress on to the front underworks than is borne by the hind axle. Hence the front springs of such carriages should have a stronger resistance than the hind ones, and to this end, where in these carriages the hind springs are made with four plates, the front ones should have five, and with a proportionate compass to produce an equal all round deflection, and a correct platform rhythm through the front and hind axle centers.

So, in proportion, the hind springs shown on the section in Fig. 1 should be so arranged in lengths, strengths and compass

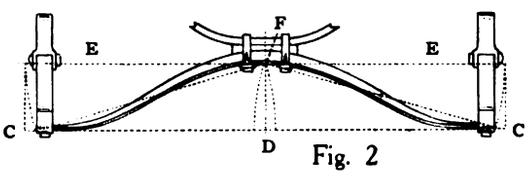


Fig. 2

connecting the points of the back and front axle, and setting off the weight of the body and occupants in their seating position, along the lever line. But as the proportion of the springs' to yield in their combined action correct deflection and rhythm. On the seat of the body section in Fig. 1 there will be a greater weight borne on the line of the cross spring A than is carried through the axle at B. This stress can easily be arrived at by strength at the points of suspension, as platform hanging, is solely being considered, the exact weight carried by the springs

Digitized by Google

at these individual parts need not be analyzed. To meet the extra weight resting on the cross spring A, it is in good coach making strengthened with an extra plate; that is, should it be found that the three-quarter elliptic is strong and pliant enough with four plates, the cross spring would be fitted with five; and whatever the compass of the cross spring may be, its extra length on being deflected to a straight line should be added to the length of the three-quarter elliptic.

So that the correct rhythm of the springs on the platform bearing may be yielded to the weight. It will be apparent that the weight is farther from the axle at B than it is on the cross spring at A. Consequently the action of the three-quarter spring would be stiffer if the length of the cross spring and it were equal. And so to balance the working, the three-quarter elliptic is made the amount of the cross spring's deflection longer, to give a greater leverage to the weight working it, and thus produce a true platform harmony in the action of the spring's hanging.

Fig. 2 shows the cross spring and its position on the center stay; the length of the spring when deflected is got by taking the ends of the spring at C C as centers, and the compass on

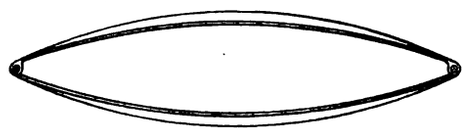


Fig. 3

the center line as radius, and drawing the arms on each side of the line, then the space at D is the amount the three-quarter spring must be longer than the cross spring, or the compass line of the spring may be projected on the line E E, and with center F take the radius of the spring at C C and draw the arcs, cutting the line E E; then drop a square line from the point down to C C on each side, which will give the correct deflected length of the spring's compass. Then the length of the line C C across the spring is the length the three-quarter elliptic ought to be with four plates, and the cross spring with five plates. The elliptic for the front under gearing is shown in Fig. 3.

In the practical suspension of carriages, especially two-wheeled vehicles, it is often found necessary to hang them with grass-hopper springs, made out-of-center, varying from one to two inches. But it is a false method of hanging, because the arms of the spring over the axle being unequal, correct pliancy is

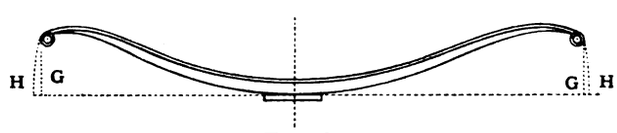


Fig. 4

unattainable, while one arm will lengthen more than the other, and a greater stress thrown on the long arm, which with a cross spring behind makes an unequal platform bearing.

Fig. 4 shows a grass-hopper spring out-of-center, and the amount each arm lengthens when weighted to a straight line, as at H G and G H. The cross spring in the gearing in Fig. 4 is of irregular curve, by which a spring does not lengthen so much as if it were made the true arc of a circle, because the return sweep absorbs, as it were, the expanding length of the spring under pressure. Hence, a spring fitted to a two-wheeled carriage, as in Fig. 4, is the best form, for the reasons already advanced. And as the ease of springs play a most important part in the character of a carriage, the subject of suspension is one that is full of direct and indirect mechanical currents, forcing themselves upon the practical intelligence of coach makers. Whether springs are too limber or free, or whether they are too stiff or irregular in their action, are live points needing a quickened intelligence to handle and explain away, and if necessary to correct to a proper balance and rhythm of movement, which a spring is understood to perform in the travel of a carriage.

SIMPLE METHOD OF ADJUSTING SIDE SPRINGS CONCORD STYLE.

Those whose duty it becomes to do repair work are the ones to whom we must look for ways and means of overcoming obstacles which present themselves in the line of repairs.

For years it has been the custom in repairing springs of Concord side-spring buggies to adjust the spring after repairing, as set forth in Fig. 1. A represents head block, B back axle bed, D D ends of springs in shackles C C, which pass over axle

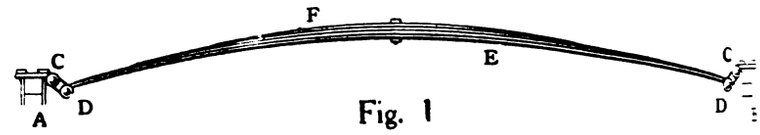


Fig. 1

bed and head block, and are secured to same when adjusted by means of bolts. E shows side of spring; F, top. The custom has ever been to repair the spring and fit it, then to take it apart, place the main plate in position and on bolster and back axle bed, as at C C and D D. After this the loose plates were placed in position, a drift pin pushed into the hole, screw clamp applied, then the ordinary slip spring clip secured, after which the body would be let down and center bolt, extending through body, inserted in hole in spring and screwed up.

In a majority of cases the adjusting is done in the open, that is, on the street—no matter whether rain, frost or snow—and when we consider the whole it is anything but a pleasant matter to contemplate, much less to perform.

Not long since while moving along and passing one of the ordinary vehicle repair shops, out came the smith and his helper and stopped by the side of a Concord side-spring buggy,

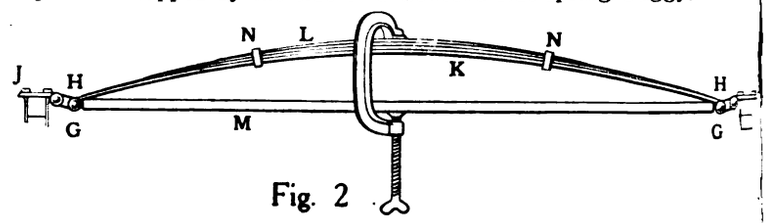


Fig. 2

carrying with them a spring of the vehicle, which they had evidently just repaired. Contrary to the usual custom the spring was ready to put in at once. Fig. 2, G G, spring ends; H H, shackles; J J, shackle plate; K, edge of spring; L, top of same; M, a strong bar of iron about 1 x 2 in., extending from G to G and secured to the spring by means of the thumb screw or clamp as represented; N N are the usual slip spring clips. They placed the shackle plates on the head block and back axle bed, put in the bolts as easy as could be, let the body down on to the spring, inserted the center bolts and adjusted them, after which the slip clips were removed, also the clamp. At the last caper the whole matter leaked out, the screw clamp and the bar of iron placed a pressure on the spring, which elongated it sufficiently to put head block and axle bed, making the outside work three-fourths less in time.

TRUCKS.

The attention of wagon builders has been directed, especially of late, to the building of a type of wagon or truck for the transportation of heavy merchandise, which in years past has been only occasionally demanded. Possibly more progress has been made in the art of wagon construction in this direction than in any other. The prominent feature of construction is the quantity of load per animal that can be comfortably carried. While there has been no pronounced departure in principle,

Digitized by Google

there have been departures in methods of construction involving more regard to what might be termed center of gravity.

This principle has been developed, especially in locomotive building, to a high degree, wherein the point sought after was to place as much weight as possible over the drivers, leaving as little as it is safe to leave to the forward wheels. The reverse rule, however, prevails in truck construction, where weight is minimized over the fifth wheel and the bulk placed over the rear wheels for self-evident reasons. While the locomotive has no fifth wheel in fact, there is an invisible fifth wheel created by the arrangement of the mechanism, which practically serves the same purpose.

For the later forms of truck construction the points arrived at are to carry the greatest possible weight with the least possible tractive power, and to involve the least labor in loading and unloading. The fifth wheels represent a marked advance in design over many of the earlier wheels which were designed merely with an idea of support and in which the greatest freedom of movement was secondary.

It goes without saying that the gear of the most highly improved trucks is exceptionally strong, and of material that is theoretically and practically perfect. The springs show no departure in construction, bulk or weight being the main consideration. Special attention is paid to quality of steel. The axles show the spirit of invention and fractures are now extremely rare, whereas in former years they were exasperatingly frequent. The possibilities of break or fracture have been anticipated in construction of material.

There is a tendency to increasing length of body, and some builders are of opinion that future changes will manifest themselves in this direction. There are those who are inclined to change the angle of the bed, making it higher rather than lower, but this is not regarded as good construction. Wheels show no variation except in supporting power, and a tendency to lessen diameter of front wheels, especially with a view to short turning.

TO PREVENT BREAKING OFF OF SHAFTS.

One of our esteemed subscribers writes us as follows: "I am engaged chiefly in building delivery and light express wagons. For the past year I have been much annoyed by the breaking of shafts at the point bolt hole of the shaft plate, as per sketch (see Fig. 1). A represents the front end of shaft, as per the length of the shaft iron; B, back end; C, the crossbar of shafts, showing location of bolt holes. The hole D is where the shaft

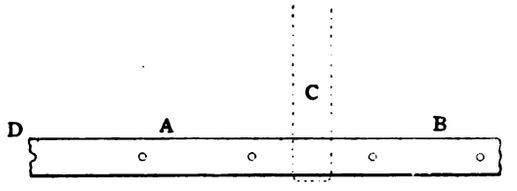


Fig. 1

usually breaks, sometimes at this place only, often another break at the next hole soon follows, and occasionally at the same time. Now then you are continuously suggesting or offering improvements to overcome the many existing evils. Please try, if you can, to do something for my relief and the relief of many, perhaps, who are afflicted the same as myself, for all of which I extend thanks in advance, and remain, sincerely. G. R. P."

Rochester, N. Y.

While the complaint of G. R. P. is not a prevailing one, it is one that comes from strain at backing against "backing timber," etc. Pulling out of deep tracks of street railways, also the same at frogs and switches. Occasionally it is because of not employing best quality wood stock. However, this is not the proper medicine to effect a cure. Where the shaft breaks it is weakened by the bolt passing through at that point. The length of shaft in front of the objective point forms a powerful lever; while we cannot reduce the leverage, we can lessen its power by strengthening the point where the break occurs.

The same might be done by continuing the plate out to the front end of the shaft on the under side, the same as is done with coupe shaft. A much better and more simple method is as set forth by our Fig. 2 and its explanation.

Fig. 2—E, front end of shaft plate; F, back part or heel; G, section of T or cross bar plate; K, extreme front end, the usual

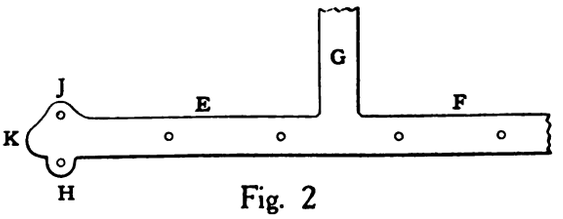


Fig. 2

bolt holes are provided; H and J are clip yokes on the sides of the shaft iron; H has the appearance of the usual clip bar, because of its being on the outside; while J may appear strange to some of our readers, its construction in such manner is a necessity, because it will prevent tearing the skin of the leg of the horse should he overreach and come in contact with it. The clip yoke permits of employing a good liberal clip, which makes future breaking at that point largely improbable.

SOMETHING NEW IN SHIFTING RAILS AND PROP NUTS.

If we know how, it is all right; and if we do not, because of want of experience, it is all the other way. To those of us with wisdom gained from experience, if we have to put on a shifting top alone, we insert the back pins first, and in removing lift the front out first, which is all right if we have action enough or room enough for action.

By this assertion we mean that if all the pins fit snug in the holes, it is easier for two to place and replace the top than it is

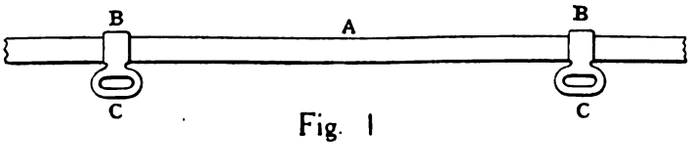


Fig. 1

for one. To overcome this see Fig. 1. A, top edge of seat panel; B B, necks of rail eyes C C. In making the eyes just a little elongated we have a chance to move the rail just a trifle and help ourselves; just try it once and see what a relief it affords.

There is no necessity of telling much about how easy it is to lose prop nuts, but we shall tell you how to keep them. Take a box nut, turn it down two-thirds the way, cut the thread on, and then with a hack saw cut down a slot as per D, Fig. 2, and leave

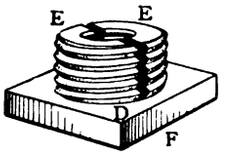


Fig. 2

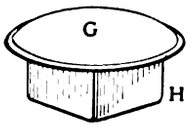


Fig. 3

the two parts E E just the least bit tapered; F is the base of the nut. Put this nut on and as far down as you want it; then place on your prop nut proper, Fig. 3; G, cap; H, base, or square part which is threaded to fit the split part, and when it is screwed on it compresses the split part, Fig. 2, on the prop, and holds it fast. It is in reality just what we have wanted—a lock prop nut.

Digitized by Google

PAINTING AND UPHOLSTERING

THE COLOR EYE.

"The electric eye" as made use of by a certain weather prognosticator some years ago brought fame and riches; and the color eye, as applied to uses in the carriage paint shop, has brought, and is bringing, some riches and an assured position to its possessors.

An eye for color is something of a natural gift or talent, and something of an acquirement due to study and practice. The workman capable of matching colors, both new and faded, and who in addition has a good knowledge of colors in general, and is qualified to mix them, need have little fear of being out of a job, provided he is sober and trustworthy. Everywhere such mechanics are being sought for. Only the other day the writer was importuned by the president of a large central west carriage manufacturing firm for information concerning a competent all-around painter, and "especially a painter with a good eye for color."

That there is a scarcity of such men is in no respect due to a lack of genius, or talent, or skill, call it what you may, but rather to a lack of practice or cultivation along this line by those actually qualified to make the best use of it.

It is a lamentable fact connected with the trade to-day that men manifest so little interest, generally speaking, for the craft accomplishments which require thought, study and much practice. A man may have an excellent eye for color, but unless he gives the organ exercise—cultivates it, in short—it will prove of little real value to him.

In the latter day and wider development of the vehicle painting trade the accomplished colorist is unmistakably the man of the hour, and especially in wagon and automobile paint shops his value overshadows that of any other class, including even the finisher and the ornamentor.

Not only in the matching of colors, but in the creation of new and striking color schemes, and in the application of colors to surfaces, the colorist stands forth the dominant figure in the paint shop. By virtue of his art, originality in vehicle painting is maintained. Why not, then, cultivate the color eye?

TO TOUCH UP AND VARNISH THE CARRIAGE.

The touch up and varnish job, as applied to horse drawn vehicles, is often a rank deceiver. It is a problem in mathematics out of which the painter not infrequently fails to extract a profit for labor and material expended. This result is due, as a rule, to the fact that the vehicle owner and user is more often than not inadvised as to the exact status of the touch up and varnish class of work.

And usually it is is exceedingly difficult to make this class of customers understand at what point the line can be drawn between the surface that simply needs to be touched up and varnished, and the one requiring more extensive treatment.

And yet, from the painter's standpoint nothing is easier, generally speaking, than the decision which separates the first named from the latter. Moreover, from an apparent business policy, the painter in the great majority of cases hesitates to stand strictly upon his technical and expert opinion as to the proper classification of the work, when opposed to the views of the owner of the vehicle.

This practice, however, is inexcusably wrong and as time goes on it will be so demonstrated in the curtailment of the profits and the general decline of the business. Anything beyond the simon-pure touch up and varnish job should be classified in the column where it belongs, and pay demanded for what both the letter and spirit of the classification stands for.

When this simple and just law of business is strictly enforced the touch up and varnish job will promptly be divested of its terrors. Naturally, it takes moral courage and a brave defiance of the fast and loose business methods to-day prevailing in carriage painting circles to draw the line sharply in these classifications cases, when the risk of losing business is imminent, but in the long run it will pay.

Technically speaking, the surface that calls for much touching up, and is blurred and worn with the heat and stress of service, should be assigned to the column of "repainting" under which head comes the application of one coat of color, striping if necessary, and one coat of varnish. This is the briefest and simplest operation under the head of repairing. The touch up and varnish job is designed to cover the surface where an occasional defect in the color and the varnish exists, and the painter, if left to himself, may be trusted to decide the latitude which this touching up work may take.

All touch up and varnish surfaces demand an unusual amount of cleaning up preparatory to the later operation. Axle arms, fifth wheels, and those other parts which get a full share of road accumulations, require special looking after. As little unhanging as possible should be done. Do not remove the top save under compulsion. Unhanging costs money—and sometimes the profits of the work. After getting the grease off, clean out the top, if any, sponge off the rubber or leather and dress same, if in the contract, side curtains, storm apron, boot, dash, etc., included. Then wash out interior of the body, and lightly rub the exterior with pumice stone flour and water. Next wash off body and running parts complete, and touch up with a matched color all surface defects, doing the work neat and clean, and touching only the defect. Rarely, at best, will the touch up color prove an absolutely perfect match. Now dust off thoroughly and varnish first the interior of the body, next the exterior, and finally the running parts.

SIDE LINES FOR THE VEHICLE PAINTER.

Lately in the numerous trade publications there has been considerable discussion concerning the side lines for the carriage and wagon painter located in the country districts, to many of whom, no doubt, the Hub makes monthly visits.

To the painter so located the side line has become imperative, because, while all things may come to him who waits, the waiting man in this day of sharp competition is quite likely to starve as he is to survive.

The country painter is confronted with conditions totally unlike those existing anywhere else. He has little, if any, chance to make good during one season what he may chance to lose, and, indeed, is more than likely to lose, another season. With him the rush season, as a rule, affords no greater profits than should be realized at all seasons. There is, in consequence, no opportunity to recover the losses of dull times through the profits of busy seasons. All of which enforces the necessity of some one or more side lines. Possibly the profits may lay in the buying, or selling, or tilling the soil, and making the painting business the side line, which is the exact condition in several instances known to the writer.

Usually the carriage painter in the country town and villages is a resourceful man, or, in the phrase of rural communities, "a jack of all trades," although free from the opprobrium that usually attaches to that term. Side lines come to him simply as a matter of course, and in some one of these it may happen he is more proficient than in the trade of painting.

Digitized by Google

What, it may be asked, are the side lines which would seem to most naturally link in with the painting business, or, perhaps we should say, the painters' trade? In the country, house painting, paper hanging, and the repairing and refinishing of furniture, or the growing of some special crop commanding a ready sale in the city markets, or the poultry business—the last being probably the most promising of all—may well appeal to the carriage and wagon painter. Now and then you meet with a man in the carriage shops who is both a carriage painter and a trimmer, and almost invariably a man of that sort is successful. In towns and cities the carriage painter employed in the average shops finds himself out of work for several months in the year. In these communities sign writing, and even card writing, furniture repairing and finishing, picture framing and the special finishing of antique and odd or out of the ordinary class of house furnishings, may be profitably engaged in.

A painter known to the writer makes the last named class of work a specialty, and picks up a good deal of work at extra prices in a town of about 6,000 population. All sorts of odds and ends of painting, lettering, wood finishing and so on may be picked up by the hustling canvasser.

There are to be sure, numerous, and, in fact, many other lines of work which the unemployed painter may engage in, but most of those above mentioned have at least an indirect relationship to his trade, and on that acount they are more easily taken up and carried forward successfully.

RUBBING AND CLEANING THE SURFACE PREPARATORY TO FINISHING.

Granting at the outset that the final coat of rubbing varnish is, as it should be, practically as clean and full of depth and goodness as the finishing coat itself, there remains simply an easy rubbing with water and pulverized pumice stone to throw the gloss down and make way for the finishing coat. The main thing is to rub the surface uniformly throughout in order to establish an equal measure of strength in all parts.

Then in the cleaning up preparatory to finishing there should be used two sets of washing utensils, one for the first washing, and another exclusively used for the final washing. Use plenty of water and make sure that the final water flow is made with perfectly clean fluid. The carriage surface is a magnet to a sufficient extent to attract to an uncommon degree atmospheric dust and dirt which, despite the ingenuity of the best of minds, is always present. Follow the washing with a thorough dusting with an absolutely clean duster. Then take a piece of worn silk that is clean and fit, faintly moisten it with raw linseed oil, and gently wipe the surface. Next proceed to blow the varnish.

A FACTOR IN SURFACING.

When you find a carriage or wagon or automobile painter forced to resort to the practice of puttying surfaces after the roughstuff has been rubbed, it is a safe proposition to charge that painter with either carelessness or lack of skill, or both.

If upon, say, the second coat of lead - counting the priming coat the first lead coat--the puttying of the surface is properly done there should be, and, in fact, there will be, no call for the application of putty above the rubbed roughstuff surface.

Putty placed on top of the roughstuff, and subject to all the ills which beset a pigment of this nature in the exposed position which it must necessarily occupy when cast between the roughstuff and the color, is in the highest degree a menance to the fine looks of the finish. It lacks, first of all, security, something which putty must have in order to hold itself in position and serve the purpose for which it is intended. Moreover, in this position it fails to afford the necessary opportunity for adequate surfacing down. And, it goes without saying that the putty improperly surfaced represents a permanent disfigurement to the finish. Putty swelling, moisture absorbing blemishes, and defects having close relationship to these are results of the deferred puttying practice. If the surface is closely puttied upon the lead coats, and reputtied on the first coat of roughstuff, there should exist no need, except in case of accidents, of any subsequent puttying.

When the surface is rubbed out of roughstuff the primary and intermediate surfacing operations have been completed, and while they are still to receive what in the trade is called the refining process, the surface is, nevertheless, sufficiently advanced to call for only what the color and the varnish are liable to contribute. Any condition which calls for the introduction of one or more of the primary or intermediate surfacing operations into this third or last stage of the surfacing process is wrong, both in theory and practice. The organic law of surfacing is entirely opposed to the practice. Above the roughstuff, as a matter of exceptional surface development, there should be no patching, or tearing away, or leveling down of pigment, surfacing from this point out being confined to rubbing and leveling the varnish coats only.

GROUND COLORS.

For any delicate shade of yellow a pure white ground offers insurmountable advantages. Over such a ground three coats of yellow will cover solidly against five coats over a darker ground. White affords less opportunity for the yellow above it to fade. Some of the dark rich greens, although ranking as strictly solid colors, are declared to hold to the purity of their color more tenaciously over a solid jet black ground, which same ground is likewise employed by some painters for a ground under ultramarine blue. Probably, however, the best ground color for this unsurpassed blue is a dark brown made up, say, of coach black, yellow and Indian red, or a straight Vandyke brown. For a special rich effect in ultramarine blue, glaze the blue over a ground of very deep green. Refined lampblack is used with success as a ground for ultramarine blue, and it yields an effect of much charm.

For running parts when exceptionally effective color depth and richness is desired, glaze the blue over orange chrome yellow mixed to dry flat.

For maroon or Munich lake, a deep warm red ground is to be chosen. A scarlet lake should have a ground of Tuscan red containing a dash of orange chrome yellow to flash a glow of warmth into it.

While the traditional peach-blow color is esteemed in many quarters as the best full grounds for the vermilion, it is nevertheless true that a flat white field holds forth these reds with great vividness and brilliancy. Most of the paler greens should have grounds somewhat lighter than themselves.

The English purple lake, which for several years past has been greatly admired both East and West by aristocratic carriage users, is used directly over a ground of coach black, and the English crimson lake, or, for that matter, the American crimson lake, is seen in the fullness of its glory over English vermilion. All lake grounds, excepting the crimson and scarlet lake, should be deep rich pigments, for, broadly speaking, the lakes are rich in proportion to their depth, and in the final reckoning depth is attained principally through the ground work colors.

Prussian blue should in all cases be omitted as a ground color, or any part of it, for ultramarine blue, as it has a clearly defined propensity for destroying the brilliancy and color of the ultramarine.

DAMAGED BY FIRE.

Fire at the plant of the Higgins Spring and Axle Co., Racine Junction, Wis., recently caused damage to the amount of $4,000. The building is considerably damaged, a large dynamo was ruined, an engine was crippled, and the plant, employing more than 300 men was closed down until repairs could be made.

Digitized by Google

THE CARRIAGE TOP AND TOP DRESSING FORMULAS.

With the carriage top the painter is upon practically as intimate terms as with almost any other part of the vehicle. Let its enamel become fractured or the face of its finish show manifestations of deterioration and the painter is turned to as the "court of last resort."

There is one class of vehicle users, the livery men, that sets little store by the restoration facilities, and it is only when all other methods fail, as a rule, that these men come to the painter for assistance. The contention, in the main, of the livery men is that top dressings, so called, are more of an injury than a benefit to the top, but conceding their unusual opportunities for observation we believe that in respect to the rubber top, at any rate, their conclusions are erroneous, provided, to be sure, that the dressings employed are free from ingredients of a destructive nature and are used discreetly. For it may be pertinent at this point to state that the best dressing extant can be, and doubtless often is, used altogether too freely, and to such an excess, in fact, that it acts positively as an injurious agent to the rubber or leather. Save in exceptional cases, as for example where the enamel has practically disappeared from the top, the dressing liquid should be applied sparingly. Such is the nature of the composition of practically all top dressing materials that they best serve the intentions of their originators when used to the minimum rather than to the maximum quantity.

The rubber top, even the best rubber, deserves the careful attention of its owner to the intent that as soon as it discloses indications of wear, however faint, a thin, uniform and nicely applied coat of dressing be given. This practice forestalls a condition from whence decay proceeds rapidly and insures for the top a length of service entirely beyond any average wear expected or realized under the practice of permitting the top to shift for itself without any preservative treatment other than a superficial washing off with water.

With the leather top the case, naturally, is different, although here we find two classes to be acccounted for, namely, the machine and the hand buffed. The machine buffed top, as may be inferred from the designated finish, will, when exposed to the same service given the hand buffed one, and ignoring exceptions, require restorative processes much sooner than the latter.

All leather tops, hand buffed and machine buffed alike, should be washed, when washing becomes necessary, with tepid water and castile soap, and dried off with a chamois skin. This has both a cleansing and a softening effect, or rather, it has the effect of keeping the leather in its originally pliable condition. When, however, in the case of the machine buffed top the enamel becomes abrased and worn off something more than a simple sponging off is necessary. For a first additional treatment rub a little neatsfoot oil, suet and beeswax over the leather, polishing dry with woolen cloths. The next stage of wear may then best be met by an application of regulation top dressing, of an approved quality, thus continuing the applications from time to time as the condition of the leather may invite.

In reference to the hand buffed leather top we recommend frequent cleansing with castile soap and water, and then as age doth stale its appearance of youth, and the erosive effects of wear manifest themselves to the discomfort of the owner, let an occasional wiping up with some soft, elastic material be indulged in.

The neatsfoot and suet salve above referred to is an excellent preparation, and may be made as follows: To ⅛ gallon of neatsfoot oil add 2 ounces of beef suet, melting the two together. Next melt, say, 30 drops of beeswax and add to the suet and oil, shaking all vigorously to secure a thorough admixture. Confine in an air-tight vessel. Apply freely to the leather and wipe to a perfectly dry state with woolen fabrics.

If preferred, neatsfoot oil may be darkened with drop black and applied. Put the oil on sparingly and polish out dry with rags of a soft texture.

Either of these formulas render the leather exceedingly soft and elastic and give it a show of original color.

Another formula provides for the mixture of 1 part neatsfoot oil to 7 parts boiled linseed oil. Then cut japan-ground drop black slightly with turpentine and add the black to the mixed oil until sufficient color is obtained. Beat carefully together until the mass is one. Apply the mixture to the leather with a brush and do not dry off until the expiration of half an hour. Then with a clean woolen cloth polish dry. In case of badly fractured top repeat the treatment, as two coats will be none too many. This imparts to the leather a flexibility not otherwise obtained.

Of top dressings adapted to rubber or leather there are divers kinds. Numerous excellent ones are to be bought at the present time ready for use, and we believe they can be recommended as trustworthy. But there are doubtless many readers who, for various reasons, prefer to make their own. And for such the following formulas are given:

No. 1.—For treatment of aged tops in an unusually bad state of wear, having little, if any, enamel remaining. To 2 parts of liquid glue add 3 parts of castile soap, dissolved. To the mass then add 125 parts of soft water. Follow with the addition of 4 parts of spirit varnish. Mix 2 parts of wheat starch in water, and this, along with enough drop black, cut slightly with turpentine, to impart a solid black stain to the whole, add to the glue, soap, water and varnish. Enclose all the ingredients in a tight can and shake until a thorough amalgamation is secured. To prevent the material from thickening, store in an air-tight receptacle. Avoid an excess supply of the black, otherwise the dressing will lack the necessary gloss.

No. 2.—For rubber tops exclusively. Two parts, each, of liquid asphaltum and elastic finishing varnish; one part, each, of boiled linseed oil and pale drying coach japan. In these proportions employ the above ingredients in a quantity to make ¾ of a gallon. Then add one pound of drop black and ¼ gallon of turpentine. Shake in a tight can to a unified mass, and store close to prevent evaporation.

No. 3.—For machine buffed leather and for rubber tops. Elastic finishing varnish, ½ gal., into which pour ⅛ pound of melted beeswax and enough drop black to impart the desired color. Thin out to a brushing consistency with turpentine, shake all ingredients intimately together, and secure the mass against the air.

In conclusion, just a few lines relative to the care and storage of the top in the paint shop. Some certain and cleanly space should be set apart for the top. A rack well up from the floor is best. Two tiers of racks, one above the other, is probably the best arrangement. Here, too, arrange a rack for cushions, top curtains, storm aprons, boots, carpets, etc.

Do not calash a top in setting it away, unless perchance it has been previously subjected to such treatment by the owner. And under no circumstances calash the top after it has been dressed or given a preservative rubbing over. Aim, so far as possible, to maintain the top, while in the shop, in a position that will, if anything, enhance its appearace when it is released for service.

HOME-MADE COMPOUND FOR CLEANING LEATHER UPHOLSTERY.

There are many preparations on the market for cleaning and polishing leather but a home-made compound can be prepared by owners, and will be found very effective and can be used on light colored leather with good results. To a pint of boiled milk which has been allowed to cool add a drachm each of sulphuric and hydrochloric acid and after thoroughly mixing them add half a drachm of oil of lavender, a pint of vinegar and the white of an egg beaten to a froth. This mixture will remove stains and is applied with a soft cloth and then rubbed with a dry cloth.

There never was an innocent scandalizer—one who, without sin, could cast the first stone.

Digitized by Google

General Topics of Interest to Trade

C. H. A. T. CONVENTION.

The eighteenth annual convention of the Carriage, Harness and Accessory Travellers Association will be held the week of the Carriage Show in New York City.

At a meeting of the board of directors at the Grand Union Hotel, New York City, June 29, the date for the convention was set for Monday night, October 5th., in the Grand Union Hotel.

It was decided to give a beefsteak dinner on Thursday night, Oct. 8th. Details of this affair will be announced later, although the plans made insure it to be the best ever held by the C. H. A. T.

The report of Secretary Kronfeld showed the affairs of the association to be in excellent shape, and a large increase in the membership is looked for preparatory to the convention.

ENTERING INTO BUSINESS FOR THEMSELVES.

Daniel D. Hoyt, formerly with Charles Caffrey, of Camden, N. J., W. D. Rogers Sons' Co., of Philadelphia, Pa., and Demarest & Co., of New York, some of the foremost wagon and carriage builders in this country, and Charles Lewis, formerly with John Craft, of Burlington, N. J., have opened a carriage and wagon factory and an automobile repair shop, at Burlington, and will begin immediately to turn out carriages and wagons for the local trade. Although they plan to do a great deal of work in their repair department they intend to make a specialty of quick repairs on automobiles and have an especial shop offering every facility for that branch of work.

Their entire plant is thoroughly up-to-date, and they are fully equipped to do any kind of wagon, carriage or automobile work.

MANY VEHICLES BURNED IN A FIRE.

More than one hundred unfinished vehicles were burned in Red Bank, N. J., by the fire at John W. Mount Company's carriage and automobile works, on June 12. All that is left of the factory is a heap of twisted iron and charred timbers. The building was 150 feet long and 110 feet wide, and was four stories high. The insurance amounted to only about a tenth of the loss, which was $75,000. The carriage repository, in which there was stored about one hundred vehicles, was not burned.

BUSINESS REPORTED GOOD IN MERRIMAC.

Business at the present time in Merrimac, Mass., is reported as being particularly good, especially in the carriage factories. The J. B. Judkins & Sons Co. has just received a large order for automobiles, and business in the other factories is reported as being good.

CARRIAGE CONCERN TO STOP BUSINESS.

The affairs of Hincks & Johnson, Bridgeport, Conn., one of the oldest carriage-making concerns in the country, are about to be wound up, and the firm will go out of business after more than half a century. Several Bridgeport and out-of-town parties have made offers for the business and it may be sold.

WAGONS IN SOUTH AFRICA.

An American consular officer in South Africa reports that there is a large sale of steel wagons and wheels in that territory, and American goods of this class should find a ready market if properly introduced. The consular officer in question has forwarded a number of photographs showing the types of wagons at present in use in that region, which may be obtained from the Bureau of Manufacturers, Washington, D. C., by interested manufacturers, together with the names of merchants to whom correspondence may be addressed regarding this subject.

WESTCOTT CARRIAGE COMPANY TO REMAIN IN RICHMOND.

The Westcott Carriage Company, of Richmond, Ind., which has been contemplating moving its plant to Anderson, Ind., announced that it would not do so, and instead will remain in Richmond.

The company will purchase the buildings formerly occupied by the Richmond Vehicle Company and after remodeling and adding to these, they will be occupied. The work on improving these buildings, which are in a sense already adapted to the needs of the company, will begin at once.

The company intends to add the manufacture of automobiles to its business and improvements will be made to that end. There are two buildings on the site to be used by the Westcott Company. These structures will be joined by another building, making a solid manufacturing plant.

More money will be put into the concern and a reorganization effected. The addition of the manufacture of automobiles by the Westcott Company will mean that more men will be needed, and the great demand for machines will mean steady employment for the men.

SATISFACTORY READJUSTMENT OF MINIMUM CARLOAD WEIGHT.

To Vehicle Manufacturers and Dealers in General:

We take pleasure in advising you that the long standing controversy between the railways among themselves and with the vehicle interests, as to the minimum carload weights, has at last been settled by agreement as nearly to the satisfaction of all as such matters could be, considering the different interests involved. This agreement was obtained by a mutual spirit of concession and applies to the Southwest— Texas, Arkansas, Oklahoma and Louisiana.

For the reason that a number of the roads had a large equipment of 50, 45 and 40 ft. cars, while others of the southwestern roads and their connections had practically none, the roads having the large equipment would necessarily have enjoyed a monopoly of the traffic, had not the other roads insisted on the use of two cars for one. To get away from that practice, which was undesirable for all interests, including the vehicle shippers under ordinary circumstances, the railroads attempted to adjust the matter by increasing the minimum on 40-45 and 50 ft. cars to an unreasonable point, leaving the Class A minimum on 36 ft. cars where it had been for years, i. e., 16,000 lbs., from that to 26,400 lbs. on 50 ft. cars.

The vehicle interests represented by the undersigned and a number of others protested so strongly against this proposed advance that as a result of a meeting held in St. Louis, April 15th, the matter was taken in hand by the executive officers of the southwestern railways. The action of the members of the southwestern committee was withdrawn and a conference was held by the executive officers with the representatives of the vehicle interests in Chicago, on May 29th. As it was impossible to reach any agreement at that meeting, owing to conflicting views, the joint meeting adjourned until June 10th, to be held at the Railway Exchange Building, Chicago.

Digitized by Google

On that date, after a very full discussion, it was finally agreed at this joint meeting, to establish two bases of rates and minimums from St. Louis to Texas common points. The first, on spring vehicles, in straight cars—rate 93 cents.

36 ft. cars.....10,000 lbs.
40 ft. cars.....14,000 lbs.
45 and 46 ft. cars.....16,000 lbs.
50 ft. cars.....18,700 lbs.

The second, on spring vehicles and farm wagons in straight or mixed carloads—rate 79 cents.

36 ft. cars.....12,000 lbs.
40 ft. cars.....18,000 lbs.
45 and 46 ft. cars.....20,500 lbs.
50 ft. cars.....23,000 lbs.

Fourth class differentials from defined territory east of the Mississippi River to be added to the 93-cent rate. For example, the Cincinnati rate would be 93 cents plus 10 cents differential to Texas common points, making the rate $1.03 through from Cincinnati as against the old third-class rate of $1.16, while to points in Texas taking the differentials over the common point rate, fourth-class differentials would be added. In case of the 79-cent rate, Class A differentials to be added in each case. For example, to Texas common points the Cincinnati rate would be 79 cents plus 9 cents differentials, making the through Class A rate from Cincinnati 88 cents as heretofore.

The Interstate Commerce Commission will be asked to permit these new minimums and the commodity rate of 93 cents from St. Louis to be put in effect on less than statutory notice. At a subsequent meeting of the railroads, the same minimums as have been agreed to for Texas, have also been recommended and will doubtless be adopted for Arkansas, Oklahoma and Louisiana. To other States than Texas, the rates and minimums will be issued and made effective on statutory notice.

Each manufacturer can easily ascertain what the effect of the new minimums would be on his particular business by comparing the freight on his shipments to Texas last year at actual weight on the then existing minimums, with what they would have been had the present minimums and rates been in effect last year. We think the results of such comparison, if correctly made, will be satisfactory to all.

The question of minimums to the Western Trunk Line territory is to receive consideration at the hands of the railroads promptly, and vehicle representatives have the assurance that they will be on the same basis of conservatism as were those adopted and approved for Texas. The matter of the rates and minimums to this territory will be carefully watched by the vehicle interests, represented by the undersigned and doubtless others, and if they are not in harmony with the action taken on Texas territory, then the matter will be taken up with the executive officers of the western railways.

Very respectfully,
THEO LUTH, Chairman,
Freight and Class. Com. C. B. N. A.
A. G. BRUNSMAN, Chairman,
Freight and Class. Com. Cin. Car. Makers' Club.

CARRIAGE BUSINESS IMPROVING IN ENGLAND.

The London Morning Post has been interviewing a prominent London coach builder, who informs the representative of that paper that the horse-drawn coach trade of the metropolis is improving.

"Ever since 1897, when the motor made its entry," says this coach builder, "our business has steadily declined. Many of our men attracted by higher wages, have left us for the motor-chassis builder, and for those remaining during the winter months we had to provide work for which there was no effective demand, with the result that our show-rooms were overstocked with vehicles, and prices fell by 25 per cent. During the season of 1907 we received many more orders for light vehicles, and the increase in the number of carriage horses in the streets and parks was very noticeable. Several reasons can be adduced for this change. In the first place, people are beginning to find that the motor is an expensive luxury, and that with wear and tear of tires and the heavy consumption of gasoline it costs twice as much to keep up as a carriage and pair of horses. Further, the supreme value of the motor—its speed—is more or less at a discount in London. Then with the advent of the taximeter cab motoring is brought within the reach of all, and thus loses that charm and novelty which commended themselves to people who required a distinctive mode of conveyance. But above all the motor fails from the social point of view. The victoria, with its prancing horses and liveried servants, adds to the dignity and charm of its occupants, but the lady buried in a motor-car driven rapidly by a chauffeur in a somber uniform can display only a veil, and that not an elegant one. The motor, in a word, destroys those little amenities of life which make shopping in Bond Street and driving in the park a pleasure. Accordingly we have come to the conclusion that although the motor-car is indispensable for those who live in the country, the horse-drawn carriage will hold its own in London."

BUSINESS GAINS.

Before starting for Europe Saturday with his new diploma as an LL. D. in his grip, J. P. Morgan said that the future for finance and industry "looks very bright indeed." There are signs which read that way.

The New York banks showed Saturday the highest surplus reserves for a number of years. The State banks have increased deposits by $25,000,000 in three months. The Pennsylvania Railroad, which has earned $2,000,000 more than dividend requirements in six months, is opening its Pittsburg and Altoona shops on full time Wednesday and is taking the covers off its idle "Teddy Bear" locomotives. Railroad dividend distributions on July 1, though 8,000 miles of road are in receivership, will be practically the same as last year. The Southern Railroad has abandoned the project of reducing wages and the Mobile and Ohio has restored the cut in office salaries .

New coke ovens are being fired in the Pittsburg region, the shipment in the McConnellsville district increasing last week 25 per cent. A new mine with 1,000 coke ovens is being developed. Fifteen hundred steel and wire men were yesterday set at work in the Schoenberger plant in Pittsburg. Reduced imports mean that personal economy is replacing personal extravagance to help our credit balance in Europe.

More important than all other good signs combined, the splendid promise of the crops indicates that nature is once more bestirring herself, as she has so often done before, to rescue a short-sighted people from the consequences of their follies.—New York World, June 30.

WRITE TO "LULU."

The West Tire Setter people have sent out to the trade a very pretty card representing a girl at the telephone who says: "I would like to talk to you about the West Hydraulic Tire Setter, it 'sets 'em cold—does an hour's work in a minute.' Will actually pay for itself in a short time where there is a reasonable amount of work to do. Manufacturers need it to help meet competition by keeping down expenses and obtaining better results. Repairers need it to save time and labor (thus increasing profits), and to help in securing new business.

"If you have mislaid our catalog, and want another, with lists of users, please let us know and it will be on the way to you by return mail. Address 'Lulu,' care of the West Tire Setter Co., Rochester, N. Y., and it will have my personal attention. Goodbye."

Digitized by Google

CINCINNATI CARRIAGE MAKERS' CLUB OUTING.

The outing of the Carriage Makers' Club was held on June 13th, an ideal day for the occasion. The members of the club, guests and representatives of the press, numbering in all nearly two hundred persons, boarded the steamer Kentucky for a trip down the river to the Laughry Island Club grounds, leaving its landing at 11.00 A. M. During the journey to the picnic grounds lunch was served. After reaching their destination, a game of baseball took place between the carriage manufacturers and the accessory men, resulting in victory for the latter.

Before going to the club house for dinner, a brief business meeting was held. Andrew Reitz, Stanley Smith, D. G. Longsberry and Otto Heinrichdorf, Jr. were received as members of the Club. The membership of Charles C. Cargill was transferred to George W. Hall. On motion of Mr. Sechler, the resignation of Mr. Firestone was accepted. The change in the constitution making a charge of $5.00 for transfer membership was adopted by full vote. Henry Ratterman, C. Walker, H. H. Pollock and H. J. Robben presented resolutions prepared by them, in memory of the late Joseph Niehaus, Sr., whose splendid character was commended. The resolutions were adopted by the club.

Theodore Luth, of the freight and classification committee, reported on matters agreed upon at the Chicago meeting, held on June 10th. He could not make a detailed report, but considered the changes asked for satisfactory to Cincinnati manufacturers. Upon motion of Mr. Pollock a vote of thanks was tendered the members of the freight committee in appreciation of their good work.

The meeting adjourned and the excursionists proceeded to the club house, and relished a very nicely prepared and served chicken dinner, which was very much enjoyed by all present.

There were 112 members, 55 guests and four members of the press present, making an actual attendance of 171 persons. The return to the city proved enjoyable, and when all left the steamer and returned to their respective homes, it was with a feeling that the affair had been the most delightful outing given by the Club.

PRECAUTION TO PREVENT FIRES.

At the annual meeting, April 9th, of the Carriage Makers' Club, of Cincinnati, the Insurance Committee of that body called attention to the big waste through fire losses, in the United States, and a clipping from a New York paper was quoted, which read as follows:—

"The losses by fire in the United States since January 1st have amounted to nearly $44,000,000, a considerable increase over the corresponding period in 1907. We are losing by fire an average of $610,000 a day.

"This is an awful waste, and nearly all of it is a needless, a criminal waste. When are we going to take this matter in hand and do something effectively to stop this evil?"

The Insurance Committee which consisted of W. A. Sayers, Chairman, C. L. Barnett, S. D. Baldwin and J. J. Weisner, impressed the members of the club of the importance to do all they can to prevent fires. You cannot afford to burn out, they said, and if the insurance companies are shown that every precaution is taken to prevent fires, they are bound to give satisfactory rates.

A printed placard consisting of special orders for fire protection was sent to each member with instructions to place in a conspicuous place in the office and departments. The following is a reprint of the placard above referred to.

Special Orders for Fire Protection for Superintendent, Foremen and Watchmen.

1st.—All departments to be clear of refuse of all kinds.

2nd.—Water barrels to be kept filled with water, and fire buckets put in their places. These barrels must not be covered at any time. Water to be changed when it becomes impure.

3rd.—Sand boxes to be kept filled and shovel handy at each box. Extra bucket, filled with sand, ready for use, to be set on top of sand box.

4th.—See that all fire extinguishers are in their proper place and are in working order. The complete equipment of fire extinguishers should be tested once a year, one or more each month.

5th.—All fire hose to be taken out and tested twice a year, and if any repairs are necessary, report to office.

6th.—All rags or refuse must be kept in Standard Metal Waste Cans, and these cans to be taken by the elevator man to yard before the machinery stops, and must be removed from premises the same day.

7th.—Use spittoons made of metal only, and never to contain any sawdust.

8th.—Gasoline, naptha, or other volatile oil, should not be kept in the building.

9th.—Gas brackets must have stiff fixtures. If it is necessary to use swinging brackets, all exposed wood-work must be protected with sheet metal, leaving an air space.

10th.—All waste must be hauled away from the premises each day.

11th.—Each floor should be kept separate by fire doors to avoid drafts.

12th.—Sheet iron cupboards with doors and latches for the hanging of clothes for each man.

13th.—All electric wires must be drawn tight, and see that the porcelain cleats are in perfect condition, and insulation is in good shape on all wires, and where wires go through partitions or walls, wire should be reinforced by using fire-proof tubing or porcelain tubes. All electric wire joints must be brazed or soldered where connection is made. Lamp cords must not be hung on nails or wrapped around piping. Paper shades must not be used. Lamps must be suspended by light twine.

14th.—Stairways must be kept clear at all times, and swept down once a week and refuse taken away.

15th.—Aisles and spaces around fire extinguishers must be clear at all times.

16th.—No stock allowed in front of windows to interfere with the firemen in case of fire.

17th.—Fire doors and shutters must be closed every night. Stock must not be in the way to hinder the ready closing of these fire doors.

18th.—Instruct your watchman that if a fire should occur, prompt action must be taken, and impress upon the watchman the importance of keeping cool.

19th.—Each foreman to inspect his department at quitting time each day and see that everything is left in good order.

20th.—Each foreman to go over these items carefully and see that these instructions are carried out, and report to the office or superintendent if anything is lacking.

21st.—Make an appointment with your night watchman once every 30 days for a 15 minutes talk regarding the condition of the factory—he may offer some suggestions that are of benefit.

22nd.—Issue instructions to each foreman four times a year (July, October, January and April 1st), cautioning them to keep everything in order, and see that all fire apparatus is in the best of condition. It will not take 15 minutes a day, four times a year (total one hour), to dictate these instructions to the stenographer, and go a little further, and issue the first of every quarter an order to your superintendent to go with you on an inspection trip to see for yourself that everything is in good shape. These few hours that you put in each year will not be noticed, but will be of great benefit and will be a good system. Mail a copy of the instructions (you give to your superintendent and foremen) to the managers of the Cincinnati Fire Prevention Bureau, so he will know what the Cincinnati manufacturers are doing; also send a copy of these instructions to any factories adjoining you, and write a letter requesting them to use the same plan. One factory is doing this, and have all the factories adjoining them using the same plan.

Digitized by Google

THE FUTURE SUPPLY OF MECHANICS.

With the rapid destruction of our forests provision has been made to some extent for our future supply of lumber, through a system of forest reservations under government control; the diminishing supply of fish has been taken care of through the agency of state hatcheries, etc., and steps have already been taken by Congress to propagate the clam and thus insure the future supply of pearl buttons. While it is gratifying to know that these matters are being properly handled, one might ask, "What has been done toward the future supply of skilled mechanics?„ Are we allowing them to die off with little or no effort to perpetuate the species? With the old-fashioned apprenticeship system practically out of existence and almost nothing to take its place, it would seem that sooner or later some scheme should be devised for the proper training of young men for industrial pursuits.

In the modern workshop the young man of mechanical ability and inclination has very little opportunity to thoroughly acquire the necessary skill to enable him to become an accomplished workman. The functions of the old-fashioned apprentice master having been trasfered to foremen and sub-foreman, his employer assumes no obligation to teach him anything, and as a rule his skilled shopmates, either from selfish or other motives, naturally refrain from imparting any more instruction in his craft than is absolutely necessary for work in hand, and he is therefore compelled to pick up his trade in a haphazard sort of way as best he can, and may never acquire that peculiar dexterity in the skilled manipulation of materials and tool which we admire in every really competent workman, writes Foreman in The Woodworker.

Notwithstanding the passing of the apprenticeship system, however, and the lack of any other sensible method for training skilled mechanics, a greater number of young men would undoubtedly devote themselves to mechanicel pursuits were it not for certain prevailing notions in regard to their training and education in general, and the erroneous attitude of society towards all forms of manual labor. The tendency of the times and the drift of education seem to elevate bookishness and relatively lower the effort involved in making useful things. The average school boy is very early impressed with the mischievous notion that head work is superior to hand work, that a poor quality of brain work is considered a greater achievement than the product of the skilled artisan. He is imbued with the idea that it is more honorable to write a poor poem than to make good mortar; that the ability to write a treatise on hygiene is surrounded with far more importance than the ability to make good soap, or skill involved in making a washtub with staves perfectly fitted so as to permit the useful function for which a tub is intended. The tendency of his training is to place the man with the monkey-wrench in the same category as the man with the muck rake, and to form a prejudice against those practical, useful and necessary occupations wherever the kind of physical exertion called work is involved.

Yet we can't blame the boy, for according to prevailing social customs the honor and esteem accorded to men is largely a question of occupation. From some source or other we have inherited a confusion of notions regarding the different kinds of employment. We associate dirt with dishonor and disagreeable surroundings with degraded persons. By common consent the labor involving dust and grime is considered unworthy, and therefore to be shunned. It is assumed that the uncouth garb betokens meanness, while an air of superiority is bestowed upon those engaged in the so-called genteel occupations, the pleasant tasks, the easy jobs, the kind of work where good clothes are held to be more respectable than good sense, while clean hands and starched linen are supposed to indicate a noble calling. Yet it would be absurd to claim that the bookkeeper is more honorable or respectable than the blacksmith or the bookbinder; it requires a higher degree of skill and intelligence to make a good book than it does to make a good bookkeeper.

The merchant is popularly considered a more respectable citizen than the mechanic, yet there seem to be no reason why there should be more respectability attached to the selling of shoes than to the shoemaker. With such pernicious notions instilled into their young heads, it cannot be expected that any great number of boys can be induced to develop mechanical skill or take much interest in any form of handicraft. So long as there exists this tendency to idolize a miscellaneous assortment of book learning and to consider its acquisition the principal aim in life, it would seem that there must remain a scarcity of young men willing to take a manly part in the active work of the world.

At the same time the question might be asked, of what use is all this knowledge unless it can be belted up to perform useful service, for after all it is not so much a question of what do you know as what you can do? At present the cry is for men of action, men who can do things, men who are not afraid to tackle difficult problems requiring mechanical ability, whether disagreeable or otherwise—to such men the field is unlimited.

It is estimated that 50 per cent. of the skilled mechanics in this country were born and trained in foreign countries. Were this supply from any cause cut off, we might find ourselves in a similiar condition to the army composed of "all officers and no privates." It has been stated that owing to our improved methods of manufacture, the skilled mechanic is no longer a necessity, yet the reverse is true. In the setting up, adjustment and operation of complicated machinery, nothing but the highest degree of mechanical skill will serve the purpose. In the contest among nations for industrial supremacy the victory will be won, not by the nation with the greatest army and the most powerful fleet, but by the nation that devotes its energies to the development of skill and efficiency among its inhabitants—to the country whose men are trained to the use of tools instead of guns.

PASSING OF THE PHAETON.

The Old-Time Favorite Carriage for Ladies is Now Seldom Seen.

Do you remember the good old phaetons that were popular a decade ago? asks a writer in the Kansas City Star. The bodies were low, prettily shaped and easy to get into and out of. They were considered the ideal carriages for women. But ideas have changed. No longer do the women prefer the low-bodied vehicles. The old style phaeton has passed into the "other days" class.

In its place has come the spider phaeton. The new rig is built upon the order of the older one with the exception of the height, a "cut under" body and a rearrangement of the springs to give more "style" and incidentally height.

And the new creation has met with much approval. The old phaeton now stands in the warehouses of dealers, low priced and uncalled for, while the spider finds many buyers at prices from $325 to $400.

It seems the tendency now to build carriages as high from the ground as possible, and it is just this that is causing the Stanhope buggies to retain popularity among women.

In the various vehicles being offered now, the coloring of the cloth fittings is in most cases a rich maroon, which the dealers say will not fade. Blues are not extinct, but they are rapidly retiring in favor of the new maroon.

Call bells, speaking tubes, clocks, electric lights, card cases—almost everything except a private bath are to be found in the new broughams. The popular varnish color for these rigs is green or dark blue. They are lined in cloth of maroon with wool and satin cloth.

A particularly handsome vehicle now is the station wagon built a good deal on the order of the brougham and almost as well equipped. The dos-a-dos buggies and traps, which can easi-

Digitized by Google

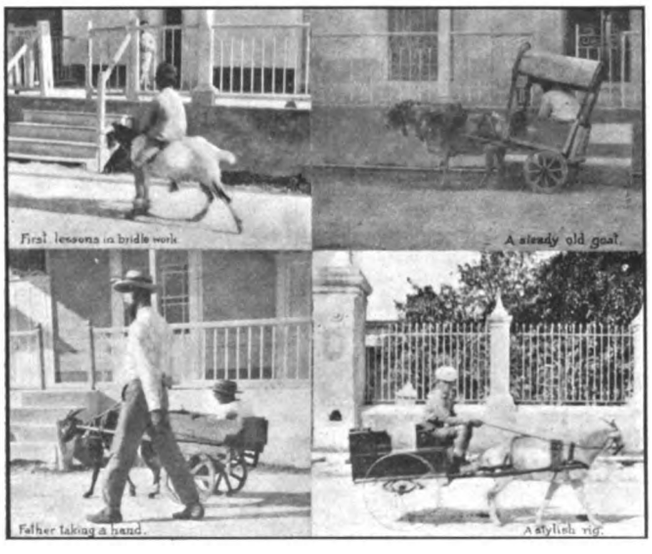
ly be transformed from one to two-seated rigs are popular with women.'

Manufacturers are now making the harness as light as possible. The bridles for single horse vehicles are little more than just a few small round straps. Brass wire or nickel trimmings are used in decorations and the monograms are used chiefly upon the drop straps, just below the neck of the horse and on the saddles of the harness. On the harness for teams the monogram is placed on the blinders. The proper whip this year consists of holly stock with a long lash of plaited rawhide.

GOAT TEAMS OF CUBA.

By a Traveling Correspondent.

Cuba is a wonderful country for goat teams. There are all kinds of vehicles, of miniature proportions, hauled along the roads by well trained goats. One would hardly believe that the goat could be made to do such good work in harness. People who come to Cuba from other lands, and go out through Vedado, or Marianao, meet numerous little outfits drawn quite speedily and steadily along the streets just like any of the horses and cattle vehicles. There are also a number of goat teams in the city of Havana. The writer became intensely interested in the goat service question, and visited the communities where goats are mostly used often as a medium of transportation, and observed the manner of training goats for the shafts. Suitable goats are selected while young and efforts made to train them to the harness. Often the youngster is permitted to run alongside of the father or mother at first, the same as the young colt is permitted to follow along with the mother in the hitch up. Sometimes it is secured to the shafts alongside of the parent,



Goat Teams of Cuba.

Cuba, come with great piles of laundry heaped on a goat rig, the patient animal standing at the gate while the goods are removed. There are also peddlers of wares who go through the streets with heavily laden little wagons which are hauled by these animals. At first they are hard to manage, but the people who make a business of using them day after day at the same work, find that the tough little chaps are exceedingly reliable.

The Cubans hold goat races and bets are made on the teams as in horse racing, and professionals travel about the country seeking active candidates for training to this work. There are some who retain the bucking habit and others that will not haul. Instances have been observed when the driver would be compelled to give the goat a little encouragement by putting his shoulder to the wheel and force the rig ahead.

The reader would be surprised if he were to visit some of the places where the goat teams are kept. Miniature stables as when it imagines it is drawing the cart. Some of the goat trainers depend a great deal upon the boys to assist them. The latter ride upon them and succeed in subduing them after a few days of such pastime. In several instances strong male goats resented the efforts of the boys to teach them, and powerful bucking goats make things so lively for the lads that the fathers had to come to the rescue. After some days of persistent work on the part of the boys, it is determined whether the animal is available for use in harness. If the goat successfully passes the first lesson, it is examined as to its physical structure. If it is strong in the legs, and well built, it may be chosen especially if heavy. However, weight does not play a very important part in the selection. There are some goats that cannot be trained, just as there are horses which cannot become accustomed to the saddle, and are used for the harness or vice versa. So it is with the goats. Some of them are found to be quite docile at the beginning and amenable to discipline. Others have to be put through a course of training before anything can be done with them.

There are thousands of goats to select from and often trainers do not spend much time over poor animals when so many good ones are available. Their abundance is due to the great demand for goat's milk in Cuba. There are goat milk industries which thrive exceedingly well, and the trainers go to these people to obtain promising young stock for the shafts. There are some rich men's sons who prefer to drive goat teams to ponies, and devote much attention to them and their equipment for riding.

When the rich man searches for a trained goat or a pair of goats for his son, he realizes that a very substantial figure must be paid for the same. Some trained goats are equal in value to some horses. Of course there are a number of market people and bottle collectors who utilize any kind of goats for hauling their junk wagons through the streets. These species of goats can be purchased for a few dollars each. Some people can go to the fields and get a goat and break him in for cart service in a few days, providing that the goat is of the right disposition; such animals are, however, only partly trained. They may work well when hitched with another goat, but they cannot be used alone very well. The perfectly trained goat, which brings a regular market value, like the trained horse, can be relied upon for effective service.

The poor people are relieved of much labor by goats in hauling their stock. The washerwoman for the troops stationed in neatly fitted as one could wish are common. Many of the Cubans do not take much care of their goats, and when not using them permit them to ramble through the junk piles of the yard, seeking refuse to eat. Others who use them continuously give them the best care, forage being purchased regularly and fed to them at the right time, developing animals that are sleek and trim. Cubans have especial places in which to wash their goats; these are white and clean as though washed in milk. When a team is made up right, and is provided with good harness, their appearance is attractive.

The goat vehicles are exceedingly elaborate, being constructed with ordinary box bodies, fitted with two or four wheels, with seats for the riders and places for carrying packages. The decorated goat wagon, however, is different, it being trimmed with various attractive riggings, besides the ribbons and strips of ropes and leather which are fixed to the wheels. There are also bits of brass or kindred metal secured to the body of the little vehicle by means of metal nails, which are always kept polished. The harness is also very liberally trimmed with polished metal devices, and sometimes bells are attached. Taken all in all, the ornamental goat rig is a very interesting feature of Cuban industry.

BUGGY WAREHOUSE BURNED.

At Orlinda, Tenn., the W. L. Crocker Buggy Company suffered the loss of their warehouse by fire June 9, entailing a loss of $10,000.

Digitized by Google

Recently Granted Carriage Patents

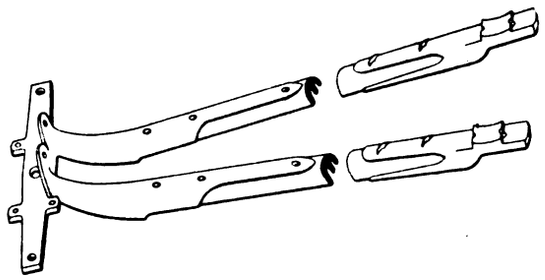
Space will not permit us to illustrate all new patents pertaining to the vehicle industry issued by the Patent Office. We therefore select those that we consider of the greatest interest to our readers.

Vehicle Reach. John M. Bryant, of Cleveland, O., assignor of one-half to Joseph L. Henry, of Rochester, N. Y. No. 888,584. Patented May 26, 1908.

This invention has for its especial object to improve the construction of the so-called reach rods or perches of carriages and other vehicles, but from a broader point of view it has for its object to provide an improved bar for use in the construction of vehicles.

The drawing is a perspective view with some parts broken away, showing a pair of reach rods or perches constructed in accordance with this invention.

The reach is formed from a flat sheet of metal bent upon itself so that in cross section it has approximately the form of an inverted letter W, the edge portions of the sheet from which it is



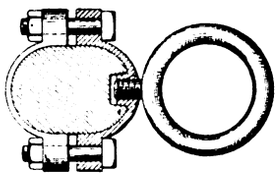
bent being brought closely together so as to form a central longitudinally extended rib of the folded rod. In fact, it will be seen that the said folded body is provided with three approximately parallel depending ribs and that each rib is made up of a fold or double thickness of metal.

To the front ends of the two reach rods thus formed, malleable iron heads are rigidly secured, either by bolts or rivets, and to afford seats for these bolts or rivets, the upper bowed portion of the folded rod is perforated and in line with such perforations, the intermediate rib forming flanges of the folded body are bowed to form a sleeve. As shown, these malleable heads are cast integral with an anchoring bar that is adapted to be rigidly secured by bolts, rivets or other suitable devices to one member of the fifth wheel of the vehicle.

To the rear ends of the folded reach rods, malleable heels are secured by means of bolts or rivets. The projecting rear ends of these heels are adapted to be secured to the rear axle in the usual way.

Whiffletree Clip. Adolph Miller, of Syracuse, N. Y. No. 888,632. Patented May 26, 1908.

This invention relates to certain improvements in clips for eveners, whiffletrees and the like, and comprises essentially two opposed but separate clip elements adapted to be clamped by

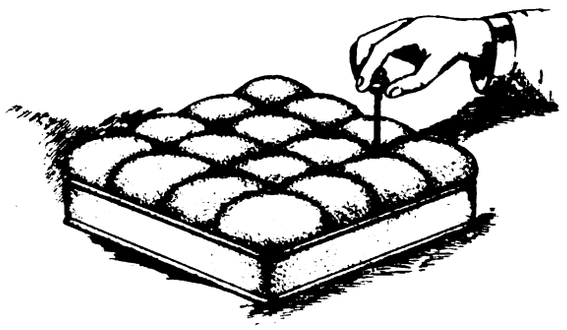


bolts or similar fastening means to the whiffletree or like part of a vehicle, one of said clamping sections being provided with a loop or eye for the reception of a link or other attaching elements.

The object is to provide means whereby these clips may be readily attached and taken up or tightened as the wood upon which they are clamped shrinks.

Another object is to provide one of the clamps with an inwardly projecting boss adapted to be seated in a socket in the adjacent side of the wood to hold the clip against undue turning movement, the stud being provided with a threaded aperture to receive the threaded stem of the loop or eye.

Upholstery. Brainerd H. Messersmith and William Healy, of Yonkers, N. Y. No. 888,720. Patented May 26, 1908.



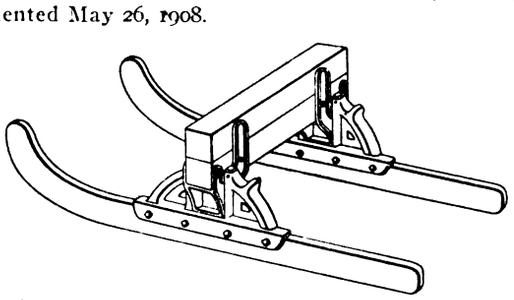
This invention has for its object to provide an improvement in tufted cushions, mattresses, or similar articles whereby the tufts may be readily cleaned.

In the usual form of mattresses and cushions in which the upholstering is formed by a button drawn through and rigidly held in place, this is difficult, as dirt, dust and insects get below the buttons and it is impossible to remove them.

With this invention the buttons are held in place by elastic connection whereby they may be drawn out from the recess which they form for the purpose of cleaning them and the recesses.

The preferred manner of assembling the elastic cord or fabric and the buttons is to firmly fasten one end of the cord or fabric to the back of the cushion, pass the other end up through an aperture therein, thread it through the eye of the button, pass it back through the aforesaid aperture and on through the remaining apertures and buttons consecutively in the same manner and until all the buttons are held in place. The end of the cord is then firmly fastened to the back. Thus it is evident that "a continuous elastic connection" is used to secure all of the buttons upon the upholstered article.

Bob Sled. Leslie D. Jannell, of Rumford Falls, Me. No. 888,888. Patented May 26, 1908.



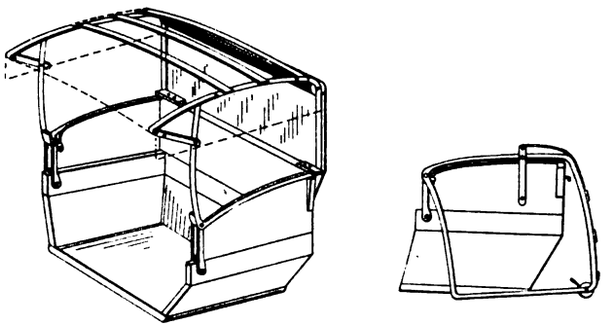
This invention relates to sleds such as are used in logging operations for hauling logs, the chief parts of the sled being a pair of runners and a cross beam, usually termed a bunk, supported by the runners, and extending across the space between them, the bunk being elevated above the runners so that one end of a log may be placed upon and chained to it, the other end of the log dragging on the track, or resting on the bunk of another sled.

Digitized by Google

This invention relates particularly to the means for connecting the bunk with the runners, and it has for its object to provide a strong and serviceable attachment for a sled runner adapted to support one end of a bunk in a raised position above the runner, and to provide a loose connection between the bunk and runner which will permit a certain freedom of independent movement of the runner relatively to the bunk, such as is required to prevent injurious or breaking strains when the sled is passing over rough roads.

Buggy Top. John C. Craig, of Kinmount, Ontario, Can., assignor of two-thirds to John J. Kenyon, of Lindsay, Can., and John T. Laking, of Haliburton, Can. No. 889,909. Patented June 9, 1908.

This invention relates to improvements in buggy tops, and the object of the invention is to devise a buggy top more simple



and cheap in construction and less liable to get out of order than the ordinary buggy top, and is more durable and easy to move.

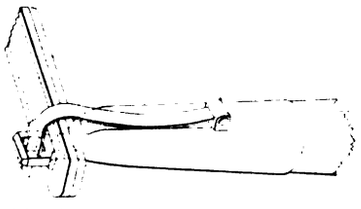
A still further object is to make the buggy top of such a form as to be readily raised and lowered without wrinkling or crimping the leather or other covering, and this obviates the consequent rapid deterioration of such covering usually incident to other tops of the bow type.

This invention consists of a top having rigid side frames preferably of steel and connected together by cross bars, supporting brackets attached to the front of the seat body at the sides and having pivoted therein the front corner of the side frames, the back of the bottom bar of the side frames being sprung and held in a cushion formed between lugs inclined at the bottom and top retaining bars.

One illustration is a perspective view of a top made in accordance with this invention showing it raised and the covering removed, but indicated in dotted lines, and the other is a side elevation showing the top lowered.

Whiffletree Hook. Lewis Morgan, of Manchester, Okla., assignor of one-half to James Jay Warnock, of same place. No. 890,082. Patented June 9, 1908.

This invention relates to a whiffletree hook provided with means for preventing the trace strap from becoming disengaged.



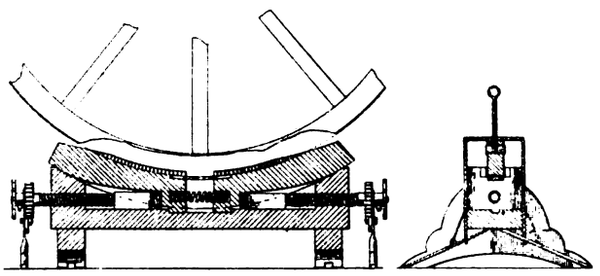
The object resides in a spring plate of novel form and construction, pivoted near the end of a whiffletree and extending through an opening in a T headed shank, to which the trace is fastened, the spring plate engaging the under side of said shank by means of an offset on said plate.

It will be seen that the spring serves to force the head or lug into engaging with the keeper, and as a result said spring becomes positively locked in engagement with the keeper and can not be moved out of the opening to release the trace unless the head is first moved against the stress of the spring and away from the keeper, this movement being in the direction of the length of the slot.

Tire Shrinker. Western D. Markham, of Friar Point, Miss., assignor of one-half to J. J. Slack, of same place. No. 890,587. Patented June 9, 1908.

This invention relates to tire shrinkers. One object is to provide a comparitively simple, inexpensive, durable, efficient and positively operated device of the nature stated.

Another object resides in the provision of a tire shrinker embodying such characteristics that the shrinking may be done



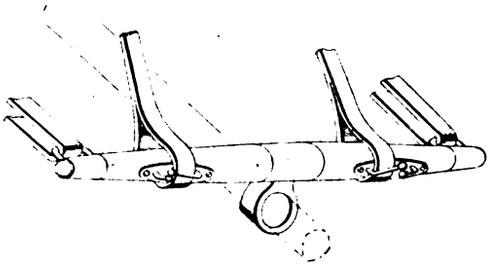
at any desired point without employing heat and preventing kinking or buckling or both during the operation.

What is claimed is: In a tire shrinker, the combination with a base, and wheel supporting sections movable upon the base and arranged to clamp the tire to be shrunk, of an inverted U-shaped clamping member having its legs straddling the sides of the said sections and the sides of the base and provided at their extremities with alining openings, levers having their under edges of rack formation, said levers being engaged through the openings and having their rack edges co-acting with the lower edges of the openings, the legs of the clamping member being of rack formation, dogs pivoted to the levers and engageable interchangeably with the rack teeth of the legs of the clamping member, and clamping screw threaded through the connecting portion of the U-shaped clamping member and adapted to bear against the felloe of the wheel supported upon the wheel supporting sections.

Accompanying drawing is a detail vertical longitudinal sectional view.

Neckyoke Attachment. Raymond K. Stevens, of Sidney, Ia. No. 890,723. Patented June 16, 1908.

This invention has for its object an improved attachment for



neckyokes, adapted to hold the pole straps in their proper places, and prevent them from slipping towards the center or off over the ends of the neckyoke, rendering the straps useless.

This invention comprehends a pair of keepers for the ends of the pole straps. Each of these keepers comprises a base plate which may be made of malleable or cast iron or other suitable material adapted to be secured to the front side of the neck yoke, said plates being of any desired length according to the width of the straps that they are intended to accommodate. On each of these straps a pair of straight angular arms are formed or secured, said arms extending outwardy from the front face of the base plate at substantially right angles thereto, and then extending towards each other as shown.

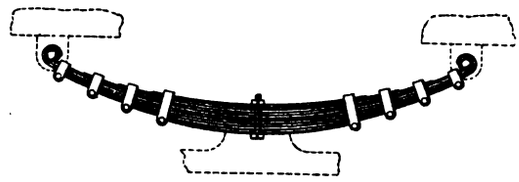
The loops at the ends of the pole straps are inserted in an edgewise direction between the ends of the angular arms, and after having been once inserted it is manifest that the pole straps will be prevented from working towards the center of the neck yoke, or out over the ends of the latter, in which latter event,

Digitized by Google

particularly, the pole straps would be rendered useless and would also interfere with the breast straps.

Vehicle Spring. Nicholas Hee, of Baldwinsville, N. Y. No. 891,168. Patented June 16, 1908.

This invention relates to certain improvements in combined vehicle spring and shock absorber, in which is sought to combine in a single spring, two sets of spring leaves co-acting with



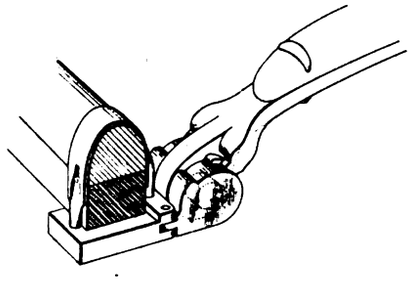
each other to afford greater resiliency under light loads and gradually increasing resistance under heavy loads, at the same time to render the vertical movement of the body, both upward and downward, less abrupt as the vehicle is passing over obstructions or uneven pavements.

In other words, the object is to provide a combined spring and shock absorber in a single element, which is not only capable of resisting excessive or sudden down-thrust of the body, but also eases the upward or rebound movement of such body, and preventing excessive strains and breakages of the leaves of the spring. This object, more specifically stated, is to provide two semi-elliptical or bow-springs of different initial curvatures, one of which is termed the body-supporting spring, while the other is designated as the shock absorbing spring, so that when the central portions of the two sets of springs are drawn together by the clamp bolt the shock absorbing spring assists or adds to the resiliency of the body-supporting spring to render the action of the latter more easy under a light load, at the same time affording a certain degree of resistance to the upward rebound of the body which is attached to the ends of the lower body-supporting spring.

Thill Coupling. Henry Paar, of Canton, O., assignor of one-half to Chas. McGranahan, of Chicago, Ill., and Elmer E. Mack, of Canton, O. No. 891,186. Patented June 16, 1908.

The present invention has relation to thill coupling.

The accompanying drawing shows the thill coupler head, which is secured to the axle in the usual manner by means of



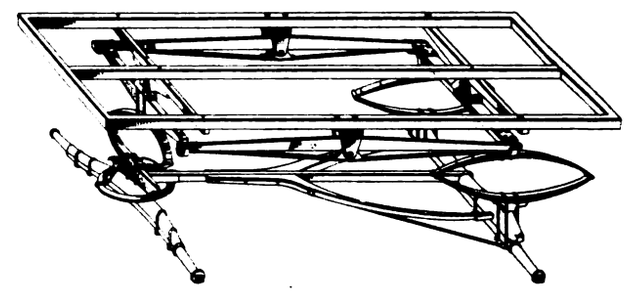
the clip. The coupler head is provided with the integral ear, which ear is substantially of the form shown and as shown its extended portion is circular.

In use when it is desired to connect the thill iron proper to the coupler head the ear is turned upon its pivotal point and brought into the position illustrated. After which one end of the cross-head is inserted in the socket formed in the ear after which the ear is brought into position, and when brought into said position the opposite end of said cross-head from that seated in the socket of the fixed ear will be seated in the socket formed in the pivotel ear. After the pivoted ear has been brought into the position illustrated the thill iron is turned down so as to bring the lugs upon the outer sides of the flanges, thereby locking the pivoted ear against pivotal movement, and at the same time securely connecting the thill iron to the coupler head.

Equalized Oscillating Gear for Road Vehicles. Louis H. Campbell, of Portland, Ore., assignor of one-half to A. A. Lindsey, trustee, of Portland, Ore. No. 891,206. Patented June 16, 1908.

This invention relates to means for preventing undue torsional strain in the vehicle frame while hauling a load over a rough section of road.

To this end the object of this invention is to so construct the running gear of a vehicle that it is enabled to adapt itself to



the unevenness or roughness in the road surface. That is to say, this running gear is made with equalizing devices which operate to neutralize the torsional strain imposed by either of the wheels dropping into a depression, or climbing an elevation in the road surface, and the consequential incline of the wagon body and shifting of the center of gravity of the weight of the load carried.

This improvement is as beneficial in the construction of vehicles designed for passenger services as it is in the construction of freight vehicles. When applied to passenger vehicles, the same are rendered more easy riding. When applied to freighting vehicles, they are rendered more easy running and their life is greatly prolonged.

The accompanying illustration shows the invention applied to a vehicle made with rigid rear axle.

ECONOMY IN THE PAINTING BUSINESS.

The really economical basis upon which to conduct a painting business is the square deal of which we have recently heard so much about. Giving, in fact, par value in service rendered for every dollar received. In other words, give the customer all that he pays for. Then in estimating upon work, do not jump at conclusions nor indulge in guess work. Adhere to a certain definite rule in computing the cost of labor and material, insurance, rent, wear and tear of tools, and such other incidental costs as local conditions may impose. Get acquainted with the details of the business. Know your customers, and study their individual characteristics, and make it a point to please the public. Maintain an accurate system of book-keeping and every month take off a trial balance in order to get your exact financial bearings. Cultivate the acquaintance of the vehicle owners and users of your locality. Advertise your business in the daily and weekly local paper. Change the advertising often, and make it readable. Buy good tools and supplies, employ competent help, and, above every thing else, be honest with yourself and with the public. All this is genuine economy.

RECENTLY EXPIRED PATENTS OF INTEREST TO THE VEHICLE TRADE.

PATENTS EXPIRED MAY 12, 1908.

451,016—End Gate. N. A. Cruzan, Astoria, Ill.
451,068—Spring Draft Attachment for Vehicles. H. Barber, Chicago, Ill.
452,046—Vehicle Wheel. A. S. Mather, Montreal, Canada.
452,047—Wheel. A. C. Mather, Montreal, Canada.
452,083—Runner for Wheeled Vehicles. T. Reece, New York, N. Y.
452,120—Clip for Whiffletrees. J. K. Henderick and M. J. Hewlett, Smithland, Ky.

Digitized by Google

PATENTS EXPIRED MAY 19, 1908.

452,376—Vehicle Running Gear. C. E. Holley, Fort Fairfield, Me.
452,425—Three-Wheeled Vehicle. C. H. Coffin, San Francisco, Cal.
452,472—Vehicle Seat Lock. D. G. Beers, Newtown, Conn.
452,531—Vehicle Spring. G. E. Raymond, Grand Rapids, Mich.
452,539—Axle-Box Extension for Vehicles. W. B. Beagle and Wm. C. Clark, Shelbina, Mo.
452,569—Vehicle Running Gear. T. Holloway, Baltimore, Md.
452,591—Wagon. C. Abresch, Milwaukee, Wis.
452,634—Thill Support. O. E. Byrd, Crawfordsville, Ind.

PATENTS EXPIRED MAY 26, 1908.

452,814—Running Gear for Wagons. D. H. Turnbull, Owego, N. Y.
452,876—Tire for Vehicle Wheels. C. H. Gray, Silvertown, County of Essex, England.
452,904—Hub Box Attachment. N. Harris, Indianapolis, Ind.
452,915—Vehicle Running Gear. G. W. Farrell, Au Sable Forks, N. Y.
452,990—Side Spring Vehicle. E. H. Carpenter, Jackson, Mich.
453,146—Whiffletree. E. Haiman, Atlanta, Ga.

PATENTS EXPIRED JUNE 2, 1908.

453,215—Vehicle Wheel—J. Severin, Aurora, Ind.
453,214—Road Cart. R. D. Scott, Pontiac, Mich.
453,256—Vehicle Shaft. J. W. Gormley, Cincinnati, Ohio.
453,432—Glass Front for Vehicles. J. E. Schorah, Wilmington, Del.
453,438—Thill Support. A. Delamater, Meadville, Pa.
453,491—Dumping Wagon. G. S. Kyle, Chambersburg, Pa.
453,533—Running Gear for Vehicles. G. L. Banks, Fredonia, Kan.
453,569—Wheel Hub. A. P. Taylor, Denver, Colo.

PATENTS EXPIRED JUNE 9, 1908.

453,619—Thill Coupling. H. D. Brown, Somerville, Mass.
453,728—Shaft Support for Vehicles. H. F. Welch, Richfield Springs, N. Y.
453,868—Metal Body for Road Wagons. C. A. Russell, Otsego, Mich.
453,896—Thill Coupling. A. Beale, Brooklyn, N. Y.
453,904—Wagon Brake. J. W. Berrin, Mount Vernon, Ill.
453,968—Hub Attaching Device. L. Faris, Pricetown, Ohio.
454,004—Dumping Wagon. J. A. Klees, Reading, Pa.

The above list of patents of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City.

DAYTON POWER HAMMER.

The accompanying half-tone illustrates a power hammer, manufactured by the Foglesong Machine Co., Dayton, Ohio, and known as the Dayton spring-cushioned helve hammer. The machine is intended to meet the demand for a first-class, moderate-priced machine, adapted for the requirements of general manufacture, blacksmith shops, wagon and carriage makers, etc. This machine has been in use in the factory of the makers, subjected to all kinds of work, and under all kinds of conditions, for a long time, and although embodying some interesting features in its design, it is by no means experimental. One of the features of this machine is a friction clutch instead of the common belt tightener for starting and stopping the machine, and controlling the stroke. Another feature of importance, not possessed by the upright style of hammer, is that of permitting such work as welding of circular pieces, tires, etc., to be done very conveniently, as there are no parts in the construction of the hammer which will obstruct the placing of work of any shape on the anvil. This feature will be greatly appreciated by blacksmiths. The driving shaft and the helve are made of hammered spindle steel. The helve is made a tapered fit, and keyed into the head, which is placed between strong and durable steel springs. Provisions are made so that all necessary adjustments can be made instantly, and the foot treadle is arranged so that the operator can stand in the front or on either side of the hammer when operating it, the variation of the foot pressure on the treadle regulating both the rapidity and the force of the blow.



This hammer is made in two sizes, No. 2 and No. 3. The No. 2 hammer weighs 900 pounds, and occupies a floor space of 48 x 20 inches. The distance from the base to the top of the anvil is 24 inches, the length of the helve is 26¼ inches, and its diameter at the large end 2 inches. The length of the stroke is 8 inches. The speed of the driving pulley is 300 revolutions, its diameter being 12 inches; the width of the belt is 3 inches, and the power required for driving is from ½ to ¾ H. P. On this hammer the manufacturers themselves have welded 1¾-inch steel axles and ¾ x 3-inch tires. The No. 3 hammer is larger and weighs 1,500 pounds, occupying a floor space of 50 x20 inches. The distance from the base to the top of the anvil is 28 inches, the length of the helve is 34 inches, the diameter being 3 inches. The length of the stroke is 8 inches. The speed of the driving pulley is 250 revolutions per minute, its diameter being 18 inches; the width of the belt is 4 inches, and the power required from ¾ to 1 H.P.

THE "TRADE" PAPER.

Few people outside of those directly interested have any idea of the number and value of the American trade publications.

These are days when every business must have its representative paper, a periodical which will serve as the eye of the trade, watching out for every little item of news referring to it, seeking for all useful information, striving to supply every pointer which may possibly benefit its readers.

The average man who takes up the average daily paper will find in it all the news of the day and page upon page of alluring advertisements of all descriptions, but only occasionally will he find anything directly referring to those engaged in the same line of business as himself, unless it be a fire or a failure, the opening of a new building or the extension of an old one; in other words, news of general interest.

This is quite natural. No one, two or even a dozen newspapers could undertake the task of furnishing the readers in every line of business with all the news of interest to them in their particular branches of commerce.

Thus the trade paper becomes a positive necessity, and by concentrating its energies on one trade and its closely allied branches it is enabled to present to its patrons not only the news in that particular line of business but also many advertisements setting forth all that is new, bright and attractive in that trade, says the Fourth Estate.

Consequently the trade paper brings about a most valuable interchange of ideas and keeps everybody thoroughly posted on everything transpiring in the business represented by the paper.

It is difficult to imagine that any trade could get along without the means of interchanging trade ideas, to say nothing of reading of the movements of captains of industry and trade solicitors, improvements in the different lines of business and the placing of fresh goods on the market.

Any trade without such a representative journal would, according to modern ideas, be in a state of unhappy isolation, which would be most fatal to progress and relegate its members back to the days, centuries ago, when all trades were confined to certain quarters of the large cities and the news of the day was exchanged over the wine cup, the beer pot, the coffee cup or the teapot.

Finally the trade paper enables a business to be located in any part of the city, state or country, instead of squeezed up in a "quarter," for in its columns those who wish to do so can read of everything of interest transpiring in the trade, whether it be in New York, San Francisco, Chicago or New Orleans, London, Paris or Timbuctoo, Ceylon, Bombay or Singapore, St. Petersburg, Pekin or Tokio.

Verily it cannot be denied that the trade paper appears to be a most useful publication.

Digitized by Google

HIGH DUTIES PREVENT THE IMPORTATION OF AMERICAN TIRES IN FRANCE.

A very serious obstacle to the creation of a demand in France for rubber tires of American manufacture, reports Consul-General Robert P. Skinner, of Marseille, is the application of a duty upon such tires of 90 francs per 100 kilos ($17.37 per 220 pounds), while tires from other countries are dutiable at the rate of only 70 francs per 100 kilos ($13.51 per 220 pounds). The consequence is that importations from the United States have been unimportant. It is impossible to furnish any reliable statistics regarding the trade, as rubber tires are comprised with a long list of other articles in rubber.

One well-known American house, appreciative of the difficulties of disposing of American tires in France, has passed over to a French firm its patent rights, with the result that, as in several other lines of industry, "American" solid rubber tires are being very extensively sold in this country, although there is nothing American about them except the type.

The general demand is said to be for a solid tire through which run two parallel steel wires. A pair of tires for wheels 39.37 inches in circumference commands from $24.30 to $35.90, according to the thickness of the sound rubber, and flat tires for wheels of the same size run up to $96.50.

Very few imported automobile tires are sold in this market for the same reasons as in the preceding case. Prices are steadily descending, in sympathy with the cost of raw rubber. It is said that $160,000 worth of tires were sold last year in Marseille. The tires offered for sale are being improved annually, not in respect to the rubber portions, but as regards the canvas linings.

It is calculated that a smooth-surface tire should run between 5,000 and 6,000 kilometers (3,106 and 3,728 miles), while the anti-skidding tires are hardly good for more than 4,000 kilometers (2,485 miles) on French roads. It is comparatively seldom that one sees a general service automobile in cities without at least one nail-shod tire. There is quite a variety of these devices, some being nail shod leather envelopes, others metal nails on the rubber envelopes, and still others rubber nails which are a part of the rubber envelope itself. Eventually the nail wears through the canvas linings, and then repairs are difficult. The use of chains woven about smooth tires, such as are seen in New York, would not be permitted here under any circumstances. As it is the nailed tires are doing incalculable damage to the roads.

Local dealers, not being manufacturers, do not know the specific gravity of the rubber employed. All manufacturers claim to use nothing but Para rubber. The best dry African rubber, which comes from French Guinea, weighs 1,102.3 pounds per cubic meter (35.314 cubic feet).

BUGGY SILL PLANING MACHINE.

This machine has been designed for the planing of buggy sills, both swelled and straight, on all four sides in one operation, and at the same time planing in the rabbet or seat.

It is built on the general style of a 4-sided sticker, but with such additions of feed rolls, pressure bars and cams as to admit the planing of swelled sills automatically. The frame is cast in one piece of the box pattern and is very strong and rigid. It carries the upper head together with all the feed rolls.

The upper head is adjustable in the same manner as the head on a moulder or sticker. On the front of the frame and sliding in heavy dovetail slides is mounted a long, heavy table. At the forward end the lower head is placed, thus planing the lower side of material first, giving an absolute surface from which to gauge, and a smooth surface as a base to do the other operations by.

It is adjustable for cut and also carries an adjustable front table which can readily be adjusted for all purposes.

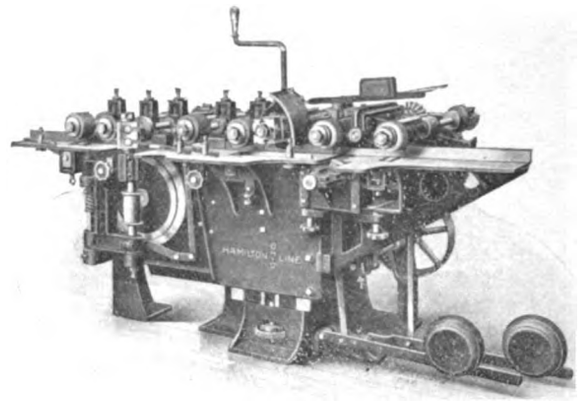
The first set of feed rolls are placed directly over this head and feed the material, holding it down properly while being operated upon by the lower head and passing same onto the upper head.

In the rear of the upper head are four driven feed rolls which receive the material after it passes the head and pass same through between the side heads at an increased rate of speed. These rolls are all geared together with miter gears and operate in conjunction with the first set of rolls. The first set of rolls are of steel corrugated, while the feeding-out rolls are of rubber so as not to mar the wood after it passes the upper head.

The inside side head is placed in the rear of the table in the same manner as the side head on any moulder. The front side head which planes the swell is mounted in a swing which gives any desired lateral motion. It is propelled by means of a large cam, which is operated by the passing of material, and which carries upon its face a spiral cam of the desired amount of swell. This cam is used after one length of sill only.

For instance after a sill 52 in. long, it is made just 52 in. in circumference. And as the material passes over the same, it rotates this cam forward and thus pushes the side head backward or forward as may be required.

There is a heavy pressure roller directly over the cam which holds down the material on the table and cam so that there can



Hamilton Buggy Sill Planer No. 53.

be no slipping. The rabbet in the buggy sill is either planed in with separate bits placed on the upper head, or on the inside head.

The machine is provided with all necessary adjustments, such as raising and lowering the table for various thickness of material or setting the heads for various widths. The front feed rolls are all weighted with adjustable pressure weights, while the feeding-out rolls are held down by adjustable springs. The feed can be instantly stopped and started by means of a clutch pulley.

There are two rates of speed, a slow and fast. The gearing on this machine is all very heavy and accurately fitted, thus making a smooth feeding machine without stop or jar.

The machine, which is built by the Bentel & Margedant Co., Hamilton, O., is very heavy, so that all classes of sills can readily be planed without difficulty. The proper springs and spring-holders are provided, also the countershaft for driving machine. This countershaft carries tight and loose pulleys 10 in. in diameter, by 5¼ in. face and should make 650 revolutions per minute. The weight of the machine is about 3,000 pounds.

WATER TROUGH FOR TESTING TIRES.

Those who have their own garages might profit by the arrangement used by a dealer, of not only having pits in the floor for inspection of the under side of the car, but also a depression in which a shallow trough of water is kept for testing tires. A neat cover can be fitted with ring or flush handle so the pit is not objectionable when not in use, but is extremely handy when wanted.

Digitized by Google

OBITUARY

Daniel G. Hetfield.

Daniel G. Hetfield, who was a member years ago of the firm of Hetfield & Johnson, Rahway, N. J., builders of trotting sulkies, died very suddenly at his home in that city on June 22, of heart failure, at the age of 75 years.

Deceased was popularly known as "Uncle Dan," and became famous in late years as a breeder of game cocks.

He said his partner built trotting sulkies for many noted horses, including Maud S. when she was queen of the turf.

Ross Stunkard.

Ross Stunkard, proprietor of the Cash Buggy Company, Brazil, Ind., fell dead on May 30 from paralysis of the heart. Mr. Stunkard had been ill the night prior to his death from congestion of the lungs, but felt better in the morning and went to business. He suddenly fell forward, dying instantly. He was 56 years old and is survived by a widow and three children.

S. H. Storms.

S. H. Storms, a pioneer wagon maker of Ravanna, Mo., died recently.

Mr. Storms was one of the first wagon and farm implement manufacturers in this country and supplied the farmers for miles around his home town, in the early days, with wagons, plows and harrows. He set up a blacksmithing shop near Ravanna, into which place he later moved, and went extensively into the manufacture of wagons. He also made a plow of his own invention, some of which are still in existence in the country, and also invented a revolving harrow that had much local repute, and was widely used in the neighborhood.

Ernest A. Schweim.

Ernest A. Schweim, retired member of Essler & Schweim, wagonmakers, of Detroit, Mich., died suddenly of heart failure on a suburban car on June 15.

Mr. Schweim, who was 58 years old, had lived on the west side of Detroit thirty-five years, and was a trustee of St. Paul's Lutheran church. Three sons and a daughter survive him.

Joseph Stettenbenz.

Joseph Stettenbenz, a well-known resident of the east end of Louisville, Ky., died June 9 at his home in that city, aged 82 years. For a number of years he conducted a blacksmith and wagon shop on the Bardstown road, where he became well known.

Thomas Kelk.

The death is announced of Thomas Kelk, the founder of the Kelk Carriage Works, Sedalia, Mo. Mr. Kelk was close on eighty years of age and had lived in Sedalia for forty years.

A. E. E. Luedinghaus.

Arthur E. E. Luedinghaus, secretary of the Luedinghaus-Espenchied Wagon Company, St. Louis, Mo., died on June 1. The deceased was the son of Henry Luedinghaus, one of the pioneers of the St. Louis wagon business and president of the company.

John R. Bennette.

John R. Bennette, for nearly thirty-five years in the employ of J. M. Quinby & Co., Newark, N. J., as crest monogram and heraldry painter, died on June 20 at his home at Irvington, a suburb of Newark, of a stroke of paralysis.

Mr. Bennette's death marked the passing away of one of the few heraldry painters in this country. A native of Newark, where he was born sixty-seven years ago, deceased served his time with the firm of Leveridge & Enders, carriage manufacturers, and later went with J. M. Quinby & Co.

In early life he developed artistic traits and after learning the trade of coach painter he soon became an expert in crest, monogram and heraldry work and is said to have been one of the best in this country when in his prime. He had made designs on coaches for some of the most prominent families in the country, and also done considerable work which found its way to Europe.

For the past year or more he was incapacitated from work and lived a retired life. He was a veteran of the Civil War, having served in the Twenty-second New Jersey Volunteer Infantry. Two sons and two daughters survive him.

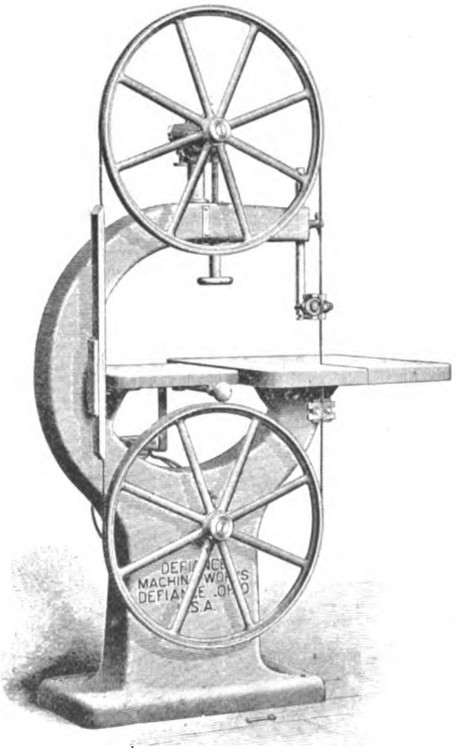
John B. Judkins.

John B. Judkins, one of the pioneers in the carriage manufacturing business, of Merrimac, Mass., died June 28, aged 73 years. Mr. Judkins was born in Sweden, N. H. He made a specialty of hacks.

NEW BAND SAWING MACHINE.

This engraving represents a new patent band sawing machine, which contains many patented features and improvements. Every detail of construction embodies the highest grade of workmanship rendering it the smoothest running and handiest machine offered of this kind. It is built by the use of automatic machines and is made of the same order as the other machines of the very highest grade, and is sold at a very moderate price. The builders are the Defiance Machine Works, Defiance, Ohio.

The wheels are 28-inch diameter, 1½ inch face, covered with



pure rubber bands. The tension device is an ingenious affair. It maintains automatically a uniform tension to the saw blade, so that the light or heavy sawing in hard or soft wood can be accomplished without fear of the saw blade breaking or running off the wheels. The table, of iron, in one piece planed perfectly true, is 24-inch by 28-inch, and can be instantly tilted to any angle to 45 degrees for conical or bevel sawing. The saw guides are of the patent non-friction type and they will not heat or injure the saw. This machine will take material up to 12 inches thick and under, and the saw blade used is 14 ft. 10 in. long.

Digitized by Google

Trade News From Near and Far

NEW FIRMS AND INCORPORATIONS.

The Century Automobile Co. has been incorporated in Joplin, Mo., with a capital stock of $10,000.

The W. T. Matters Hardware & Vehicle Co. has been incorporated in Neosho, Mo., with a capital stock of $10,000.

The S. E. Drake Co. has been incorporated in Lexington, Ky., with a capital of $10,000, and will carry vehicles.

The Capital Carriage Co. has opened for business in Tulare, Cal., with a full line of vehicles.

The Lester-Sicard Vehicle Company has been incorporated at Fort Smith, Ark., for the purpose of dealing in vehicles of all kinds. Capital stock, $5,000.

The firm of Robert J. Schonebaum, of East St. Louis, Ill., has been incorporated with a capital of $10,000.

S. D. Dineen, of Huron, S. D., will establish a branch implement and vehicle house in Yale, S. D.

W. R. Green has engaged in the carriage and wagon business in Estancia, N. M.

Thomas W. Gaw has engaged in the hardware and vehicle business in Haviland, Kan.

Chas. Monahan contemplates opening a vehicle stock in West Union, Iowa.

Laufman & Bussard have engaged in the wholesale vehicle business in Denver, Colo.

M. M. Smith has just engaged in the vehicle and hardware business in Mackey, Iowa.

C. Woolser has engaged in the vehicle business in Hubbell, Neb.

The Louisville Woodstock Co. has been incorporated in Louisville, Ky., with a capital of $10,000, to make poles, shafts, etc.

Miller & Bronson have just opened a hardware and vehicle store in Quinn, S. D.

Vaughn, Hoffman & Co. have engaged in the vehicle business in Council Bluffs, Kan.

The American Automobile Co. has been incorporated in Boston, Mass., with a capital stock of $60,000.

S. B. Knudson has purchased the Van Druff implement and vehicle business in St. Paul, Neb.

The Shelby Auto Co. has been incorporated in Shelby, N. C., with a capital stock of $10,000.

M. A. Larson has engaged in the vehicle business in Hoardville, Neb.

Geo. R. Hodge has engaged in the vehicle business in La Crosse, Wis.

The Mohawk Machine Shop has been incorporated in Fonda, N. Y., with a capital of $5,100, to make motor vehicles.

BUSINESS CHANGES.

Gardner Bros. have purchased the vehicle and implement business of J. T. Madison, in Quinlan, Okla.

C. A. Tuggle has sold his implement business in Erick, Okla., to S. R. Warren, who will also handle carriages, etc.

G. B. Howell has purchased the implement and vehicle business of J. W. Fitch & Co., in Madison, Neb.

M. M. Brumley has succeeded to the vehicle business of G. W. Butterfield & Co., in Table Rock, Neb.

W. Belden has succeeded to the entire business of the Grinnell Vehicle Co., in Grinnell, Iowa.

Johnson & Schmidt have sold their vehicle and implement business in Concord, Neb., to Charles Allen, of Page.

C. D. Barrett & Co. have purchased the vehicle business of Peebler & Chamberlain, in Athena, Ore.

H. H. Haverly has sold his stock of vehicles, etc., in Foster, Mo., to C. C. Swarens.

F. T. Burdick has sold out his vehicle and implement business in Britt, Iowa, to P. Reinholdt.

L. D. Cochran has been succeeded in the vehicle business in Kirksville, Mo., by Cochran & Hutcheson.

Laudermilk & Reinchel have sold their buggy and implement business in Loveland, Colo., to A. B. Miller.

Mullin & McCarthy have purchased the vehicle business of Grossman & Timmons, in Council Bluffs, Iowa.

J. W. Shafer, of Oakland, Cal., has purchased the vehicle and implement business of T. H. Miller, in Morgan Hill, Cal.

H. L. Baker has succeeded Gibson & Miller in the hardware business in Americus, Kan., but they continue in the vehicle line.

O. H. Davis has sold his stock of buggies, etc., in Madalia, Minn., to M. J. Wentz.

J. Nienaber has sold a half interest in his hardware and vehicle business in Humphrey, Neb., to Fred Fangman.

C. H. Johnson has purchased the implement and vehicle business of Hengstler Bros., in Battle Creek, Neb.

MISCELLANEOUS.

The Kunkel Wagon Co., of Baltimore, Md., has let the contract for an additional story to its factory building.

Charles Rhuel will rebuild his wagon factory, which we recently destroyed by fire in Cullman, Ala.

The A. A. Cooper Wagon Works contemplates the erection of a factory building in Dubuque, Iowa.

P. J. Lang is building a carriage factory in Tulsa, Okla.

The Farmers' Handy Wagon Co., of Saginaw, Mich., will open a branch factory in Des Moines, Iowa.

Knight & Son will erect a two-story brick carriage shop in Salt Lake City, Utah, to cost $7,000.

FIRES.

The implement and vehicle establishment of E. E. Craig & Co., in Ennis, Tex., has been destroyed by fire.

The carriage and harness establishment of G. J. Hall, in Elberton, Ga., has been destroyed by fire.

The warehouse of the W. L. Crocker Buggy Co. has been destroyed by fire in Orlinda, Tenn. Loss, $10,000.

The store of the Branch Buggy & Implement Co., in Fort Branch, Ind., has been destroyed by fire.

PLAYING PIRATES.

The Chicago News fails to name the hero of this story, but has it that the visitor to the home of a well-known Hoosier State author found his three youngsters romping in the hallway.

"What are you playing, boys?" he inquired.

"We are playing pirates," elucidated the smallest.

"Pirates? Why, how can you play pirates in Indiana? There are no seas bordering on this State."

"Oh, we don't need any seas. We are literary pirates, like pa."

And five minutes later a chorus of yells from behind the barn told that the hand that wields the pen can also wield the shingle.

Let each one test the matter for himself by actual experiment, and he will soon be able to know for himself what is right and what is wrong; and whether all your own deeds do not reflect back upon yourself.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

AUTOMOBILE VERSUS BUGGY.

What the Dealers in a Western City Have to Say on This Interesting Subject.

The following article, taken from a recent issue of the Council Bluffs, Ia., Nonpareil, while not true in every detail, is of particular interest to the trade at the present time:

There is no doubt, say local implement dealers who handle automobiles, that the buggy trade is becoming affected by the advent and unprecedented popularity of the automobile in this country. While dealers in other portions of the United States are suffering a marked decrease in the sale of buggies as the result of the automobile business, the jobbers of this territory are not so strongly affected. No reason is given for this peculiar circumstance, but it exists nevertheless.

More noticeable in the sale of high grade buggies than elsewhere is the falling off of trade, say the dealers, and to a certain extent the falling off is confined to the higher grade vehicle. This is due to the fact that those having money enough to invest in an automobile have heretofore bought nothing but the best in the way of other conveyances. As every auto that goes out replaces a buggy or carriage the demand for these vehicles is gradually decreasing and it is thought this decrease will continue indefinitely, although there will ever be a good trade on buggies and like means of transportation.

Growth of Popularity.

That this effect was taking place was first noticed by local dealers last year, but at that time the automobile was in the infancy of its popularity and the effect was scarcely perceptible. This year, however, the lack of business along these lines was a great deal more pronounced and it is said next year will witness an even greater falling off in the buggy business.

The fact that all lines of business are at present in an abnormal condition as the result of the recent financial flurry makes it hard to judge accurately the exact effect of the automobile sales on the buggy industry. It is admitted, however, that the effect is there and will remain. Even manufacturers are coming to realize the important factor the automobile is becoming, and it is said that many of them are abandoning their buggy trade and confining their time and money to the business of building horseless carriages.

Prosperity of Farmer.

The unprecedented prosperity of the American farmer has, say the jobbers, been conducive to the purchase of automobiles. Those farmers who have accumulated a large amount of money are the ones who are doing most of the buying.

"It is a good deal on the principle of the man who has a lot of dining room chairs and then purchases an expensive rocker," said one dealer, "if he has not the money to buy the rocker with he will do without."

It is estimated that only about one farmer in fifty buys an automobile.

No decrease in the price of buggies is looked for. Owing to the fact that buggy material is so expensive there will be no reduction in the price, no matter how close a second the automobile runs.

Little Wood in Auto.

In the construction of automobiles the spokes of the wheels are the only parts requiring a wood of superior strength and quality, it is said, and then too, the machine is yet so much of a novelty that those who can will get hold of one even at great personal sacrifice and inconvenience. Many automobile bodies are now being built of steel and aluminum and there is bare possibility that in years to come the cost of manufacturing an automobile will not far exceed that of a first class buggy. It is even now admitted by buggy dealers that this will cause an increase in the sales of the one and a decrease in the sales of the other although they are unwilling to admit that the horse-drawn vehicle will ever be relegated to the rear.

The tendency among automobile owners is not for a cheaper machine, but for a more expensive one. It is said that a man who purchases an automobile with two cylinders will never rest until he has secured a machine with four cylinders. Many instances of this kind were cited by a dealer which have occurred in Council Bluffs.

"When they get a machine," said he, "it makes no difference how fast it may go or how good its construction may be, they get the auto fever and want either an auto that will look bigger and go faster or one of another make."

In large cities, say the jobbers, the automobile as a means of transportation for city visitors will eventually relegate the cab business to the rear. This has been done to a certain extent already and the tendency is for a greater number of automobiles and fewer cabs and horses.

For business purposes, say the dealers, the smaller machine is still much used and its popularity will in all probability never wane. This owing to the fact that a business man wants an automobile into which he can step and attend to his affairs without having three or four friends with him as would be likely if he had a bigger machine.

Cost of Maintenance.

It is almost impossible, say implement men, to estimate accurately the cost of maintaining an automobile. Sometimes a machine will be all right for several months without even so much as cleaning it, and again some little thing may go wrong every day. To illustrate this two examples of the extremes were given. One Council Bluffs man had purchased a machine and ran it every day for eight months, rain or shine, and at the end of that time his actual expense was 25 cents, which was spent for a broken link in the chain. This does not include gasoline and oil and having the machine cleaned once, which amounted to something less than $80. At the end of eight months the machine was just beginning to wear and it is probable that from that on considerable money was spent for new parts.

Another man purchased the same kind of a machine and from the start he has apparently done nothing but buy repairs, and it is estimated that he will have paid out at the end of a year in the neighborhood of $500 for repairing broken parts and new tires. This expense is estimated with the understanding that

Digitized by Google

the owner cares for his own machine. If he employed a driver there would be no limit to the expense he might incur.

Although there are many more expensive and many less expensive machines sold in this territory, it is said by dealers that the $1,200 machine is the one which sells the best. For this sum can be secured a large, four-seat touring car with four cylinders.

THE MOTOR BODY AND THE COACH BUILDER.

The Motor a Blessing to the Carriage Builder if He Will Grasp the Opportunity Now Within His Reach.

In previous issues we have brought before the notice of the coach builder that the opportunity of capturing the motor body trade had already arrived, and we feel that there is no need of apology for our alluding to it again, says the Coachbuilders' Art Journal, of London, England. Indeed, as this is a very extensive business, and one which will still greatly increase, we should not be doing our duty to the trades we represent as their literary representative if we let any occasion slip, upon which we can conscientiously assure them that the work is there for the seeking, for fear of being thought pedantic.

In our intimate connection with the trade we have special facilities for knowing what is transpiring, and we find that the coach builder is pushing with new energy for business in new and repair work in motor car bodies. That branch of coach building is an increasing and profitable one, and, by reason of the alteration in fashion and the excessive wear and tear, is very much more recurrent than the horse carriage work. The motor car body work which has been on the road for the last few years, is already becoming old-fashioned; as well as worn out, and motorists are now wanting new bodies to old chassis. When we say old chassis, we do not mean that they are either worn out or obsolete. They are for all utility purposes as good as new, with the exception of some insignificant improvements in detail, only noticeable to the engineer. Chassis and motors are expensive things, and the gentry are beginning to realize that, by the addition of new coach work, they can possess an up-to-date car at a relatively small cost (having new bodies built to the chassis they already possess), and, as we have already mentioned, this is the coach builder's opportunity, if they will only push for the work. Gentlemen are beginning to look upon the motor in the same light as formerly they regarded the horse, as a means of locomotion but more convenient and more economical in use.

The coach builder did not supply the horse, but made his living out of the carriage. Amongst other things which will benefit the motor body builder is the fact that interchangeable bodies, two or three to fit the one chassis, are coming very much into favor. This branch of the motor car trade, we mean bodies, whether fixed or interchangeable, is peculiarly the coach builder's own. It is neither suitable nor acceptable to large firms who turn out standard cars by the hundred. They do not seek it; they do not want it, for they know very well that in this department of coach work they cannot compete with the coach builder, either in price or elegance of design or finish. Such firms, therefore, are out of competition with the orthodox carriage builder, and among the carriage builders themselves competition is not so fierce as in what might be called the wholesale trade or in horse vehicles.

It cannot be denied that much of the new body work has been lost for the want of energy and appreciativeness of the status the motor would take in the road traction, and only a few of the far-seeing ones have reaped the harvest which they could see laying to their hand through the advent of the motor.

It is poor work, however, "crying over spilt milk," and now that the second harvest is ripening for the sickle it behooves every carriage builder to let it be known to his clients, and everyone else who it might concern, for the matter of that, that he can either build bodies or do repair work, or it will be placed with those who do boom themselves. Fresh trade cannot be procured unless probable customers are informed and continually reminded where they can buy. Every motorist, it must be remembered, is a probable customer if he knows where to go for what he wants.

We have predicted that the motor to the carriage trade was a blessing, in disguise perhaps, but nevertheless a blessing, inasmuch that, although it may depress the carriage trade for a time, it would be the means of resuscitating it and bringing years of future prosperity, which would not only equal, but, by reason of the much larger extent of its usefulness, excel what is sometimes called "the good old days." The greater distances covered by the motor car in comparison with the horse carriage, necessitates much more wear and tear, and consequently more repair work, besides which, the life of a motor car body is from four to five years, instead of from twenty to thirty, which the best carriage builders boasted for their carriages. This represents from five to six motor bodies to one horse carriage, besides the corresponding increase in the amount of repairs needed to keep the motor body in proper repair during its shorter life.

The motor has revolutionized the whole trade, and the new order of things has got far beyond the chrysalis stage, and the greater number of motor cars upon the road the greater will be the amount of new work and repairs for the coach builder who keeps his name well before all probable customers.

In the twentieth century nothing can be done without advertising, more especially in a new branch of industry. The business is about, but it must be sought after; there are too many hunting up business to leave anything for those who sit contentedly in their office waiting for it to come. The motor car trade is not so subject to effects of general depression as the carriage trade, which is to a certain extent a luxury, for this reason, if times were bad, a gentleman would make his old carriage do until better days had come, because three or four years in the life of a carriage built to last twenty or thirty years is a matter of no importance, but in a motor car body it sometimes represents its whole existence, and, therefore, must be renewed whether times are good or bad, if the owner means to ride at all.

ONE USE FOR ABANDONED CARS.

It has generally been thought that the cars of the earlier days were of a more fleeting order than their present day successors, and, so far as length of time in service of the same owner is concerned, this is quite true, says The Automobile. But the mere fact that these old cars have disappeared from view completely does not necessarily imply that they have passed away for good. Many of them are commonly accounted for by the fact that they have finally reached the stage where they are only salable in remote districts, and, strange as it may seem, not a few of them are said to have found their way abroad to places where there is no great premium on the latest models, for the reason that the latter are unknown.

A very large percentage of these old timers have not passed away for good, by any means, and even though their power plants are of a degree of efficiency which would make their travel slow and halting beside their latter-day brothers, their motors will still run day in and day out, and they are being utilized in numbers for stationary power purposes, where they may last for a great many years to come. As a matter of fact, not a few instances have come to light in which an automobile is serving its owner in the dual capacity of power plant and road vehicle, occupying one role during business hours in the small shop in which it is the boiler, engine and other essentials of the power installation rolled into one, while during the times of its owner's leisure it takes to the road. Many oldtimers doubtless will be doing shop service long after their origin is forgotten.

Never suffer yourself to be used as counters of a game—for then each side plays with you; you get nothing whichever side wins—you are the pawns.

Digitized by Google

MINISTER WU TAKES TRIP OVER ROOF IN STUDEBAKER ELECTRIC.

Wu Ting Fang, minister from China, recently made a trip from Chicago to South Bend, Ind., and spent a day in South Bend inspecting the immense plants of the Singer Sewing Machine Company, the Oliver Plow Works and the Studebaker vehicle and automobile factories, each the largest of its kind in the world.

At the Studebaker factory Minister Wu was entertained by President J. M. Studebaker, who took him for a trip through the works, which Minister Wu says he will never forget and never expects to duplicate.

President Studebaker seated the Chinese minister in his Studebaker electric, and together they drove in through the broad factory gates, down the wide factory aisles with the busy machines and workmen on either side, and on to one of the great elevators, by which they were taken to the roof, where they continued their trip over the roadway and bridges, nearly a quarter of a mile long, which makes a complete circuit over the roofs of the great vehicle plant. Whenever they came to a building they wished to inspect, the car would be driven on to an elevator and descending would make the circuit of the desired floor and return to the roof again by way of the elevator.

Although the trip was a dizzy one, President Studebaker's perfect control of the car seemed to inspire Minister Wu with confidence, and he enjoyed the very unusual trip.

KNOX FOUR-CYLINDER TWO-TON TRUCK.

Illustrated on this page.

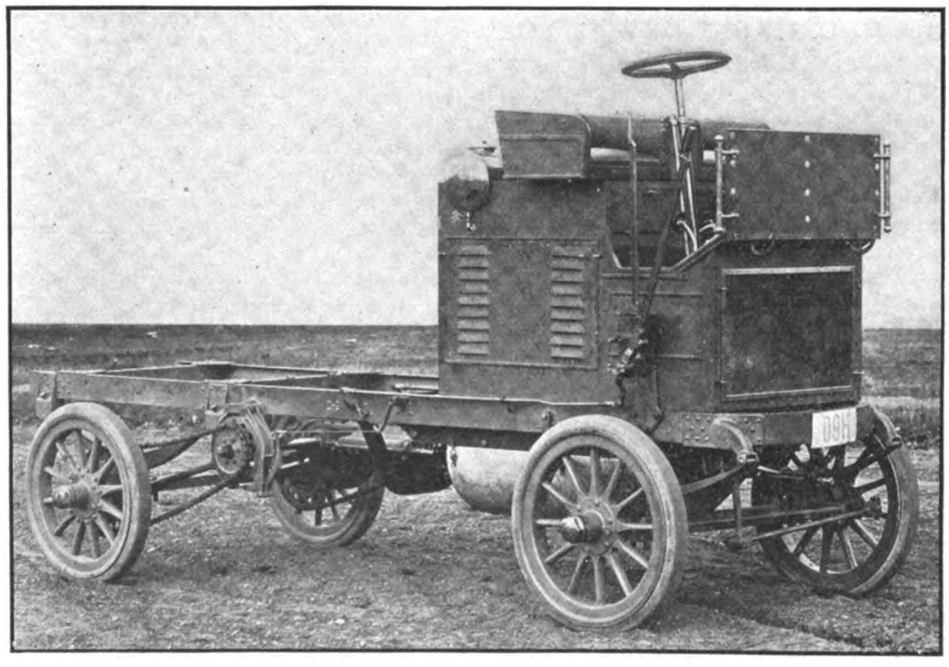
On this page we illustrate a chassis as produced by the Knox Automobile Co., Springfield, Mass., ready for the wagon maker to place upon it any desired style of body having a capacity not exceeding two tons.

The maximum road speed to be attained by this car is twenty miles per hour and the engine, which has four cylinders, is air cooled, and of forty horse-power. The wheel-base is 125 in. and the tread is 61 in. Tires are solid rubber; front, 34 in. by 4 in., and rear, 34 in. by 5 in. The road wheels are made with Timken bearings.

Transmission is three speeds forward and one reverse, and drive, double chain. The foot brake applies to counter shaft, and the hand brake applies to hubs of both rear wheels. Springs are semi-elliptic; front, 40 in., and rear, 50 in. long. The chassis frame is made of 5 in. channel iron.

STILL ANOTHER TAXIMETER DEVICE.

"The Exact," a new taximeter device recently placed on the market, is made by a Berlin concern, the General Taximeter Company, which has secured the American rights. It claims advantages of compactness and lightness which, it is said, will make it available for horse-drawn cabs as well as motor vehicles. The new device, like those used by the New York Transportation Company, which is interested in the taximeter company, has the "For Hire" flag, but this flag in the new device is not interlocked with the fare registering mechanism. The signal as to the rate being recorded in the "Exact" is given by a distinct semaphone, which by its position tells the inspector on the street just what rate per mile is being charged. This feature gained for the new device the police approval of Paris and Berlin, where one of the functions of the police is to see to it that cab users are not overcharged.



KNOX TWO-CYLINDER TWO-TON TRUCK.
Described on this page.

RECORD OF AUTOMOBILES USED IN THE UNITED STATES.

Here are some figures that may be of interest to those persons who try to figure out the number of rubber tires made and used. The records kept by the Association of Licensed Automobile Manufacturers show that 47,302 pleasure vehicles of the gasoline type were made in the United States during 1907. The aggregated value is $96,169,572. It is estimated that during the same year 5,000 steam and electric pleasure vehicles were built and sold, of the value of $7,500,000, making a total value of $105,669,572. The value of such products in 1904 was $26,645,064, since which the increase of population has increased at a practically steady rate.

We never hear of mortals being entirely blest; but we often hear of them being completely miserable.

Digitized by Google

IS AN AUTOMOBILE A CARRIAGE?

If a vehicle is drawn by a horse it is a carriage. If it be propelled by electricity, gasoline or steam it is not a carriage. That is the effect of a decision just handed down by the full bench of the Supreme Court of Massachusetts. By this it is meant that an automobile is something that a town or city is not legally obliged to take into account in constructing and improving its highways.

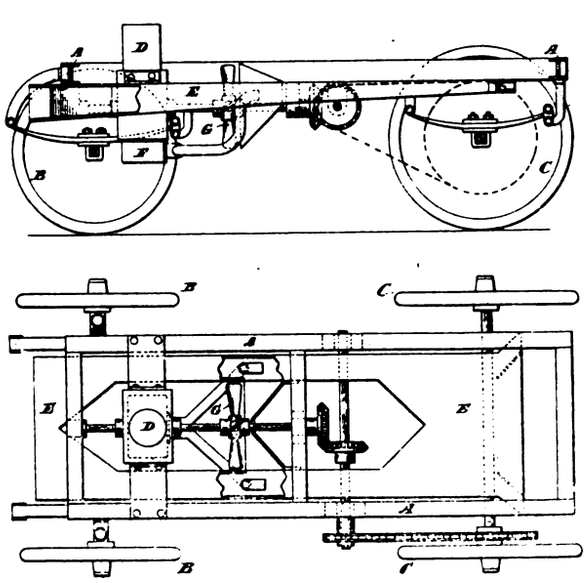
About the same time, Judge Lynch of Wilkes-Barre, Pa., held that an automobile is to be considered as much as a vehicle as a carriage drawn by horses. The decision was in the case of W. W. Scranton, of Scranton, who is fighting to compel the Laurel Run Turnpike Company to open its mountain boulevard between Wilkes-Barre and Bear Creek for the use of automobiles. The company, in answering the bill, contended that autos are not available for the road; that the road was not built for the use of motor machines, and that as an auto is a conveyance not generally used it is not to be classed as a vehicle like a carriage drawn by horses. Judge Lynch ordered all these averments stricken out.

DUST REMOVING AND EXHAUST DEVICE FOR AUTOMOBILES.

The objects of this invention, which was patented by Peter N. Ramsey, of New York City, are to provide means for avoiding the clouds of dust and dirt which envelope the rear end of automobiles when moving at high speed, and to provide improved means for securing a proper exhaust from gas, steam, or similar engines used on automobiles and to dispose of the exhaust vapors.

In the drawings, A is the lower framework of the automobile, B the front and C the rear wheels, D a motor engine of any suitable form which is shown as driving the automobile through motor shaft, bevel gears, cross shaft and sprocket chain.

Referring to the novel features of the construction shown, E is a flat tube or box extending substantially the full width of



the frame A and from front to rear of the automobile. This tube E tapers from its open inlet or mouth at the front end of the automobile where the vertical dimensions of the tube are considerable, to much smaller vertical dimensions at its discharge or rear mouth so that the air received at the inlet is compressed as it passes through the tapering tube to the discharge where it is discharged with great force.

The rear portion of the tube E is preferably expanded sidewise, as shown, and provided with baffle plates, with the result that a portion of the air is thrown out sidewise as it leaves the discharge, and thus acts upon the rims of the rear wheel C so as to blow off the dust and dirt and prevent the same being carried upward as the wheels rotate. The air from the central portion of the discharge also blows rearward the dust which tends to rise behind the automobile and thus keeps the rear of the automobile free therefrom.

It may be found desirable in some cases to provide a fan for creating a stronger current of air through the tube E, and for this purpose the tube is cut away or provided with openings at opposite sides of the motor mechanism and a fan G as mounted upon the driving shaft just ahead of these openings, plates on opposite sides being used behind the fan to form conduits leading from the fan to the parts of the tube E on opposite sides of the motor mechanism.

ST. LOUIS CONCERN ORGANIZED TO BUILD MEDIUM PRICED CARS.

The Cook Motor Vehicle Co. has recently been organized in St. Louis, with the object of manufacturing motor buggies. The principals of the company are O. H. Cook, of the Cook Carriage Company, and E. A. Levy, who has been connected with the motor vehicle business. The car which they are building is made in both the high wheel solid tire type and the low wheel pneumatic tired style. The car is a genuine automobile and possesses all the advantages of the buggy type, with none of its drawbacks. These cars are made in the two passenger, three passenger and delivery styles, and they range in price from $600 upward. By the use of a particularly efficient engine and transmission system, the car, it is said, is far beyond the average in pulling power and hill-climbing ability.

"CAN YOU BEAT THIS?"

American Tire Armor Co. (San Francisco) announce that they are "soon to market an automoblie tire that will revolutionize the tire business of the world," says the India Rubber World. This will begin when they have sold some of the $5,000.000 in capital shares authorized by their Arizona charter. Their plan is to sell all the automobile tires required in the United States at an average price of $50, and an average profit of $12.50 per tire, all of which works out, according to the company's figures, at an annual dividend of 50 per cent. on the entire capital. As the automobile production grows, the yearly dividend is expected to go up to 75 per cent. The San Francisco public has been allowed to see the new tire and demonstrations of it in the principal Eastern cities are promised early this month. By the way, the prospectus fails to mention what the company's procedure might be in case any other tire makers should refuse to allow the American Tire Armor Co. to absorb all the trade.

MEETING OF TIRE MANUFACTURERS.

A meeting of the tire manufacturers of the United States was held at Cleveland, O., on May 21, to consider matters of common interest with regard to trade conditions. A committee was appointed to report at a future meeting which will probably be held on July 25. Complaints in some quarters of price cutting, and the club proposition received consideration. Club members securing inside prices is seriously interfering with the business of the accessory dealers, and fears have been expressed that it might extend to the buying of cars. The Clincher Rim Association held a meeting at the same time, the object being to devise a plan for standardizing rims. Some progress was made in this direction and subsequent meetings will be held to further the object.

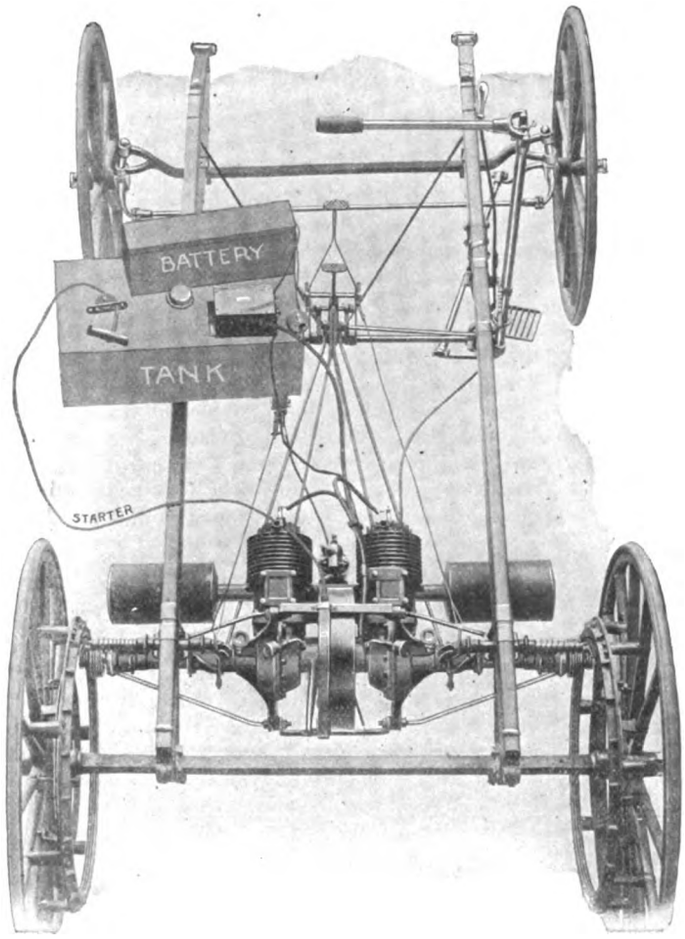
Digitized by Google

DURYEA MOTOR BUGGY.

Charles E. Duryea, Reading, Pa., has placed upon the market a motor buggy, the chassis of which is shown herewith and the same with buggy body mounted upon it on page 148. A body to carry four persons is also equipped if desired. Mr. Duryea says: "Every feature embodied in these vehicles is old and time proven, but the combination and the results are new and frequent tests have demonstrated every claim."

The buggy has side bars rigid on rear axle and three quarter springs on front and the body is also spring-mounted. The motor is swung, nearly horizontal, with shaft 10 in. in front of and parallel to rear axle.

On its telescopic shaft ends are grooved rollers, 2 sizes, which engage inside of large driving rings on wheels, or outside of large reverse rings if motor is swung backward. A change pedal telescopes shaft and brings desired rollers into line. The grooves permit slipping like a clutch, or positive driving like a gear. Direct drive on all speeds without a counter shaft. The steering



Chassis of the Duryea Motor Buggy.

is by cross lever and post supported on side bar. Inclined steering pivots and all joints adjustable. Practically irreversible. The inner rear wheel is released in turning corners.

Wheels are 36 in. front, with 1¼ in. solid rubber tires, 1 in. spokes and I-beam axle; 42 in. rear, with 1⅜ in. tires, 1¼ in. spokes and 1¼ in. square axle with ball bearing. Base is 80 in., gauge, 56 in., or according to order. Motor is air-cooled, 2-cycle, 10 to 12 horse power with fly-wheel between the two 3¾ in. x 3¾ in. cylinders. Heads front, inclined 15 degrees. Fan, timer and distributor are in fly-wheel. Throttle is in steering handle, spark rod on post, and speed lever near post.

Brake pedal is at the front, and change pedal at the rear of center of floor. There are no other pedals. Seat starting handle is near brake pedal and lubrication is by oil in fuel tank and grease cups on engine bearings, preventing smoke. Roller bearings are dirt proof and take pressure at driving rollers.

The brakes are grooved iron shoes rubbing in the large rings. They shield rollers from dirt. Tank, battery and coil are in the body. Speeds depend on easily changed roller sizes, 20 mi. maximum, ordinarily. Weight is 850 lbs., 60 per cent. being on rear wheels.

NEW MOTOR BUGGY CONCERN ORGANIZED.

The Advance Motor Vehicle Company recently incorporated under the laws of Ohio, organized as follows:

George Behlen, Cincinnati, Ohio, president; Colonel T. J. Kauffman, Dayton, Ohio, vice-president; James A. Kauffman, Miamisburg, Ohio, secretary, and Jacob Klee, Cincinnati, Ohio, treasurer.

They will build a motor car on the buggy type.

The factory will be located at Miamisburg, Ohio, and the selling agency will be with the Chas. Behlen Sons Co., carriage builders, Vine and 15th streets, Cincinnati, Ohio.

AUTOMOBILES AND RUBBER.

There is no reason for the rubber interest to feel dubious with regard to the future so long as motor cars continue to be made and used in constantly increasing numbers, and this condition now appears to be as permanent as any other economic factor in present day life, says the India Rubber World. If one were to judge of general business conditions in the United States by the status of the automobile industry alone, the conclusion might reasonably be that in no past time had the country been so prosperous. Each year adds to the number of horseless carriages here more than the total number registered in any other country on earth, and every indication points to the manufacture of a still greater number in each year to come.

The business depression in America during the past half year has been accompanied by a concerted disposition on the part of manufacturers and others who build for the future to limit production solely to immediate demands. Great concerns which formerly were active twelve months in the year producing goods which might reasonably, judging from past experience, find a market ultimately, decided to make nothing which was not called for in specific orders actually in hand.

The result is that such important organizations as the United States Rubber Company have in hand to-day an exceptionally small inventory of raw materials and finished goods. At the same time every effort has been made by them to bring together the largest possible volume of "quick assets"—cash and other realized items. The fact that these concerns have been less active than in former years during the winter months is by no means to be taken as evidence of an unhealthy condition of trade and industry.

On the other hand, when the whole history of the year just closed comes to be written, we believe that the opinion will find support that decidedly healthful conditions have obtained. Why go on, year after year, making goods without an occasional taking of stock to see whether the rate of output was not in excess of the rate of development of the country? Such stock taking has now occured, and the resumption of activity in the rubber industry, based upon the renewed liberal demand for goods of all kinds, is clearly reflected in the recent advances in the price of raw rubber.

But we have digressed here to consider the rubber industry, as a whole, after starting out to discuss the automobile industry, which would not exist but for the rubber tire. This branch of the rubber industry was never so prosperous as at this moment. Not only is every tire maker of importance working overtime nowadays to meet the demands of customers, but the manufacture of rubber tires in America is more profitable to-day than ever before. It is not so long since the head of a certain rubber company declared that whereas tires had represented 55 per cent.

Digitized by Google

in selling value of their output for a year, the remaining 45 per cent. of products had supplied the whole of the company's profits. During the past year the same company, with a largely increased production of automobile tires, has derived a handsome rate of profit from this line, though selling at distinctly lower prices.

The truth is that the automobile is too new a factor in life to have become definitely placed until now, and the rubber man, like everybody else concerned in its developement, has required time in which to "find himself." The automobile is as firmly placed now, however, as an economic factor as the horse and wagon ever were, and seems likely to hold its own in days to come as long as the horse and wagon did in the past. All of which points to good business for the makers of rubber tires year after year, on a scale which would make Charles Goodyear and Thomas Hancock turn incessantly in their graves if news could reach them of the great development which has taken place in the industry which they labored so long and so hard to develop, with such small rewards, measured by twentieth century conditions.

KNOX FIREFIGHTER IMPRESSES EXPERTS.

Illustrated on page 149.

Impressive demonstration of the possibilities of the automobile as a firefighter marked a test recently given at Wayne, Pa.

The Knox Automoblie Co., of Springfield, Mass., was among the first to see the superior advantages possessed by the automobile as a means for getting to fires quickly and extinguishing them in incipient stages. Springfield, home of the Knox Company, early installed a new branch of the department, known as the "Flying Squadron." The squad wagons, of which there are two, answer every alarm of fire, and reports of the department show that in every case they have been first on the scene, and have done work of incalculable value in getting fires under control before the heavier apparatus arrived.

Hartford and other New England cities quickly followed the lead of Springfield, and in order to get towns in the vicinity of Philadelphia to adopt the modern methods of dealing with fires, the Knox Company began a campaign in that district. It found one company quickly ready to test the cars. The Radner Fire Company, of Wayne, purchased a Knox chassis, and mounted on it a Watrous gasoline engine. The complete apparatus was tested at Wayne, with a full turnout of the "Millionaires" Fire Company. A large and enthusiastic crowd watched the test.

POPULAR HIGH WHEEL MOTOR BUGGY.

We call the attention of our readers to the advertisement of the W. H. Kiblinger Co., of Auburn, Ind., which appears in the advertising section of this issue. The Kiblinger Co. have been before the public since 1870 and they are well known as makers of high-grade vehicles.

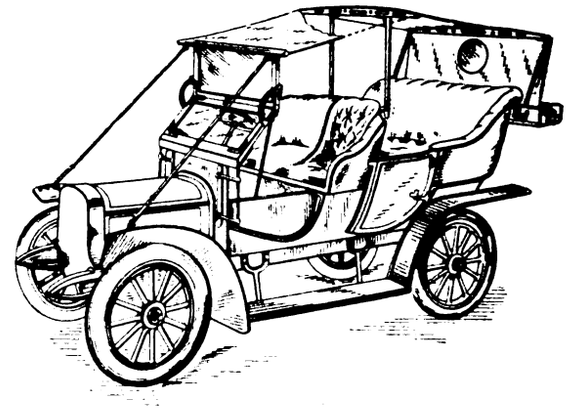
They now have a motor buggy on the market which they claim is first class like the rest of their output. That this motor car is popular is evidenced by the fact that for the past three months their factory has been running 24 hours a day. This of course indicates a long line of orders, but we understand that by this means they are also able to make prompt shipment.

AWNING AND DUST SCREEN FOR VEHICLES.

On June 16 the United States Patent Office granted to Henri S. Samnee, of Paisley, Scotland, a patent for an awning and dust screen for vehicles, applicable especially to self-propelled vehicles, for the purpose of excluding dust, rain, sun, etc.; the screen is applicable as a dust screen only at the back of the car, or it may be extended so as to form an awning or cover over all or some of the seats.

As shown, a box or casing is arranged at the back of the car to support the roller and to inclose the awning or screen when not in use; the rear portion of the box serves to contain all the detachable portions of the awning and its supports or attachments and side curtains, if these be used. The roller and sheet are contained in the front portion of the box and the sheet is withdrawn through the slot. The box or casing round the roller may, however, be dispensed with.

Where it is desired to use the sheet as an awning extending over both seats, as shown in illustration, the back frame is raised to its substantially upright position and the second frame at the back of the front seat is also erected and the awning is drawn over these and extended to the front of the car where it is suitably secured. The vehicle illustrated is provided with a known form of folding wind screen; the end of the awning engages the top of the screen and the fastenings are connected by adjustable straps to brackets fixed on the mud guards or other part of the front of the car. Again, if it is desired to arrange the awning only over the tonneau the end of the sheet is secured to the forward frame thus leaving the front seat uncovered.



A section of celluloid or other flexible transparent material may be inserted in the awning so as to enable the occupants of the car to look through the back when the awning is up. The tops of the frames are practically straight. As the roller yields a little in the middle the upper surface of the tops of the frames may have a slight curve to keep the sheet taut throughout.

TIRES BY THE MILE.

The New York Taxicab Co. has contracted with the Goodrich Tire & Rubber Co. to furnish tires by the mile. The tires remain the property of the manufacturers, who are paid so much for each mile tire travels. Three hundred cabs were equipped for the New York Taxicab Co. and 50 cabs for the New York Transportation Co., the latter contract amounting to about 3,300,000 miles. They are the Goodyear Detachable tires on Goodyear Universal rims. The contract also includes the Goodyear air bottle for inflating tires.

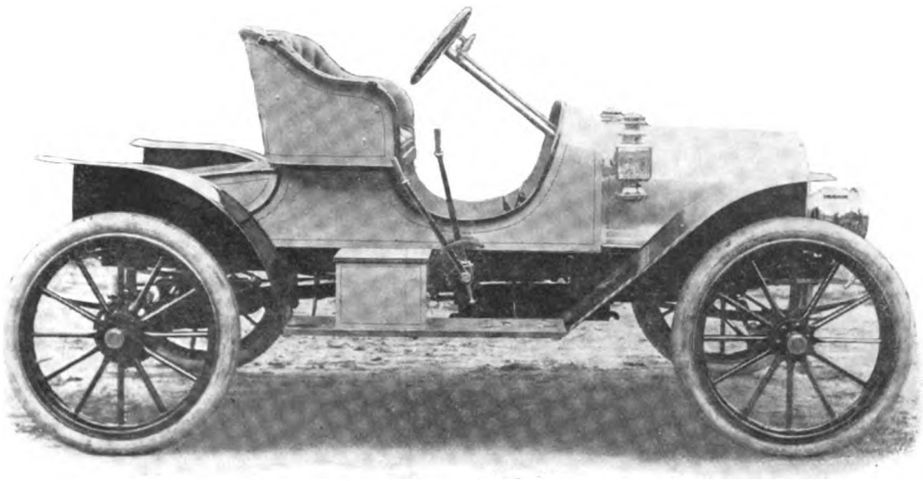
AN IMPORTANT MOTOR CAR ACCESSORY.

"The Goodyear Air Bottle," which is a tank fitted with valve, pressure gauge, safety blow off, and valve lifter, filled with sufficient compressed air to inflate eight 3-inch tires to 60 pounds pressure or equivalent, is being placed on the market by the Goodyear Tire & Rubber Co. A small hose attached to the bottle is fastened to the opening of the tire valve and the valve on the bottle opened. The pressure gauge indicates when the tire is full enough. The bottle enables automobile drivers to save time while en route, in case it is necessary to inflate a tire

NEW MOTOR COMPANY ELECTS OFFICERS.

The Advance Motor Vehicle Company has elected as officers George Behlen, Cincinnati, president; Col. T. J. Kauffman, Dayton, O., vice president; James A. Kauffman, Miamisburg, secretary, and Jacob Klee, Cincinnati, treasurer.

Digitized by Google



TWO-PASSENGER RUNABOUT

Built by

OVERLAND AUTO CO.,

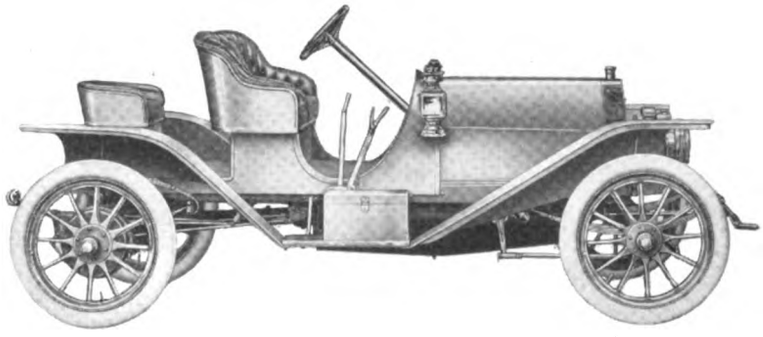
Indianapolis, Ind.

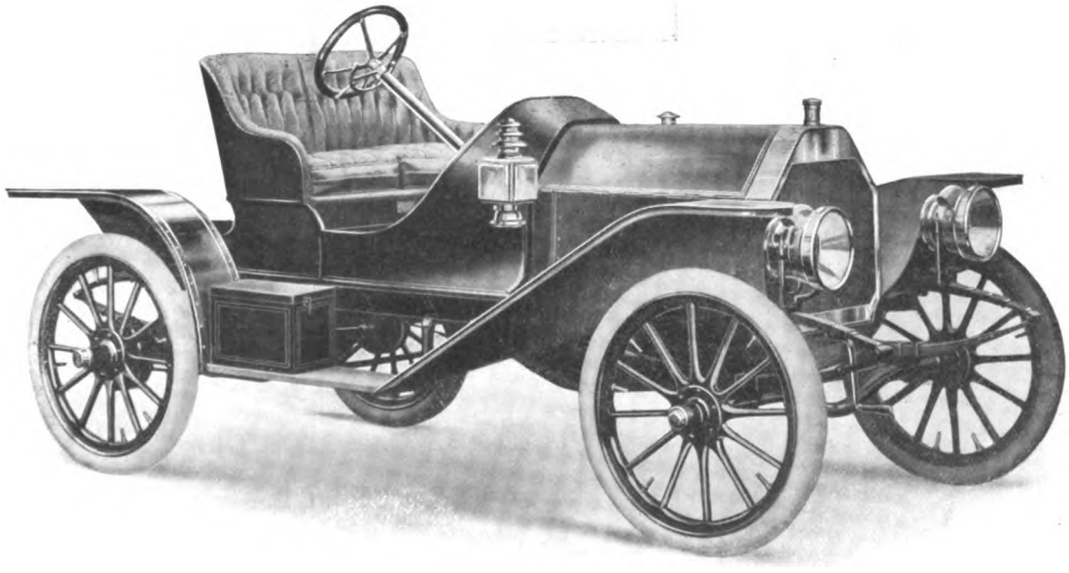
MIDLAND ROADSTER

Built by

MIDLAND MOTOR COMPANY,

Moline, Ill.





ROADSTER FOR TWO

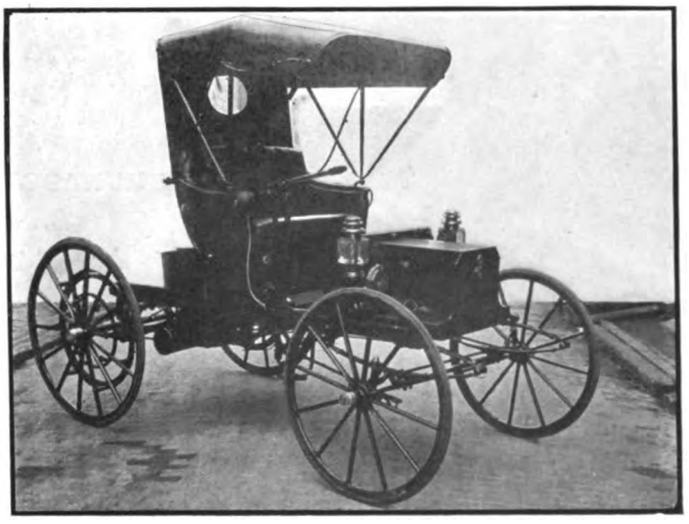
Built by

CAMERON CAR CO.,

Beverly, Mass.

Two and Three-Passenger Cars of the Runabout Type

Digitized by Google



MOTOR BUGGY

Built by

CHARLES E. DURYEA,

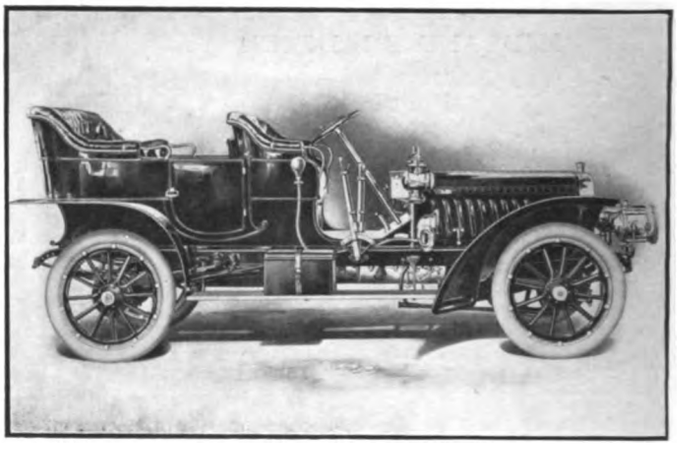
Reading, Pa.

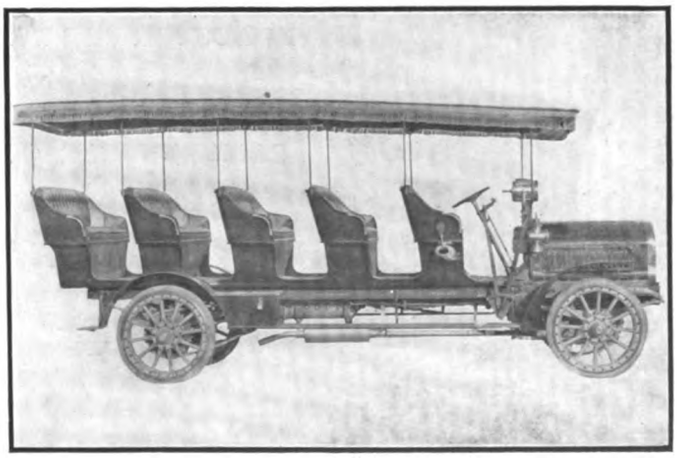
TOURING CAR

Built by

STEVENS-DURYEA CO.,

Chicopee Falls, Mass.





TWENTY-PASSENGER CAR

Built by

MACK BROS. MOTOR CAR CO.,

Allentown, Pa.

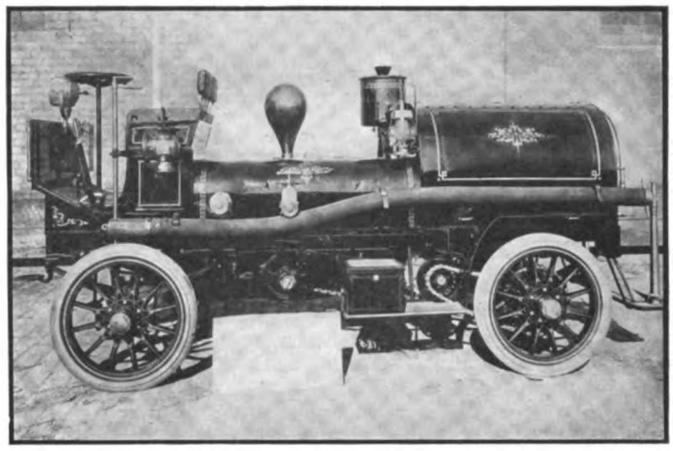
Three distinct representatives of Motor Car Construction

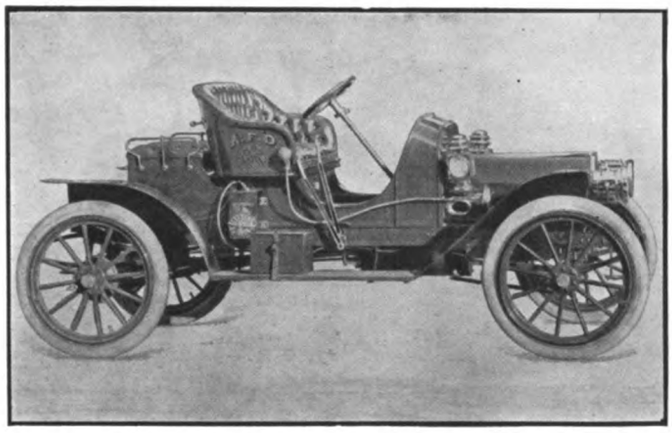
Digitized by Google

MOTOR DRIVEN FIRE ENGINE

on a

KNOX CHASSIS.





FIRE CHIEF'S MOTOR CAR

Built by

CAMERON CAR CO.,

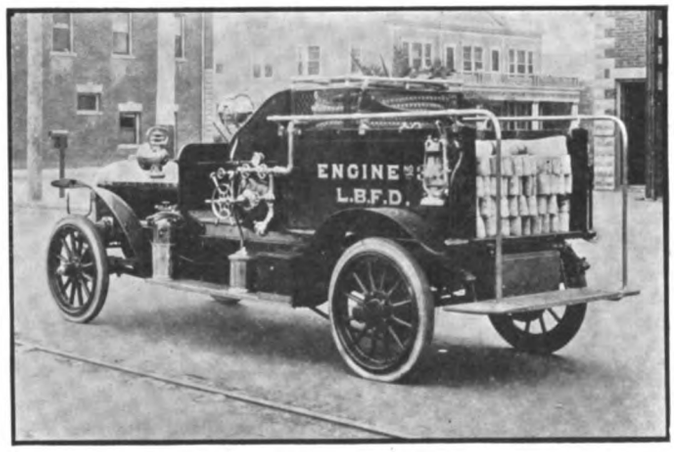
Beverly, Mass.

LONG BEACH (CAL.) FIRE CAR

Built by

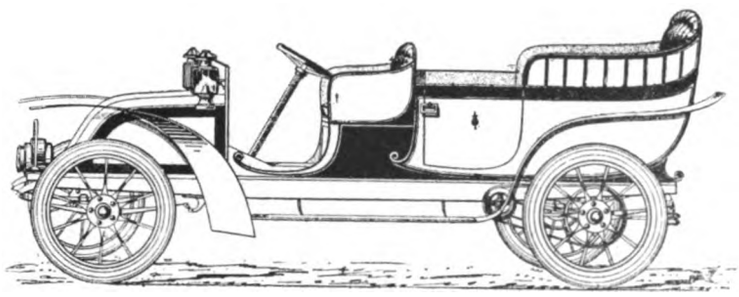
T. B. JEFFREY CO.,

Kenosha, Wis.



Three Styles of Fire Apparatus Now in Daily Use

Digitized by Google



HARMONY EXERCISED

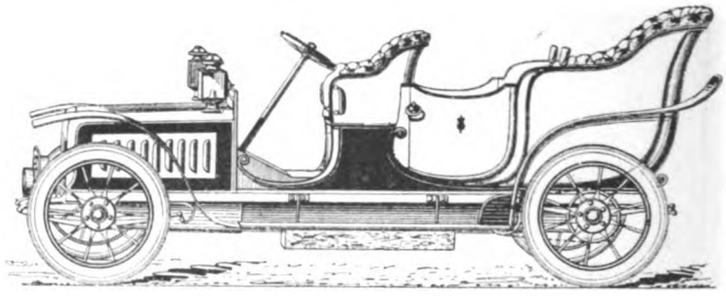
in use of

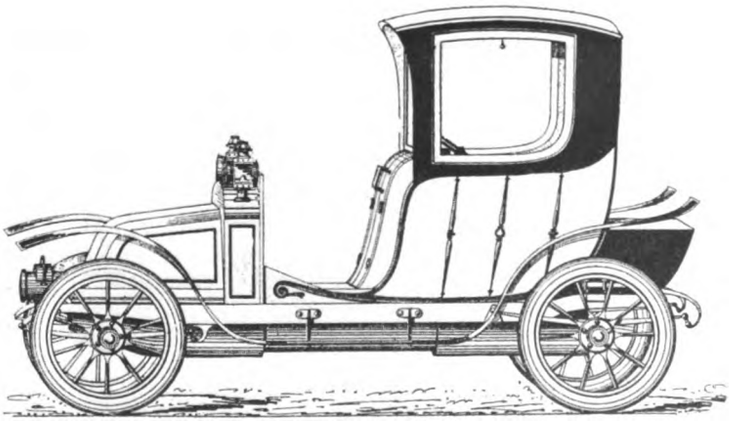
CURVED LINES.

CONCAVE-CONVEX LINES

in

TASTEFUL CONTOUR.





SOMETHING NEW

for

TAXICAB BUILDERS.

Three New Designs from "La Carrosserie Francaise"

Digitized by Google

Body Construction and Finish

FITTING A FULL EXTENSION CANOPY TO AN OPEN MOTOR CAR BODY.

Illustrations accompanying.

Motor carriage builders, who are in the van throughout the world, seem unconsciously to have found an intuitive inspiration from the exhortations of the poet, who, with gilded fervor, harangues us to "Leave thy low vaulted past."

Every car produced is possessed of some change in design or some mechanical improvement has been made in the accessory fittings, which its immediate predecessors are short of. And so, layer upon layer, improvements are made to strengthen the motor car carriage in the striving to attain advances towards perfection.

This is a desirable and healthy emulative spirit to do battle with, and the lever with which to triumph over difficulties, and bring ultimate victory.

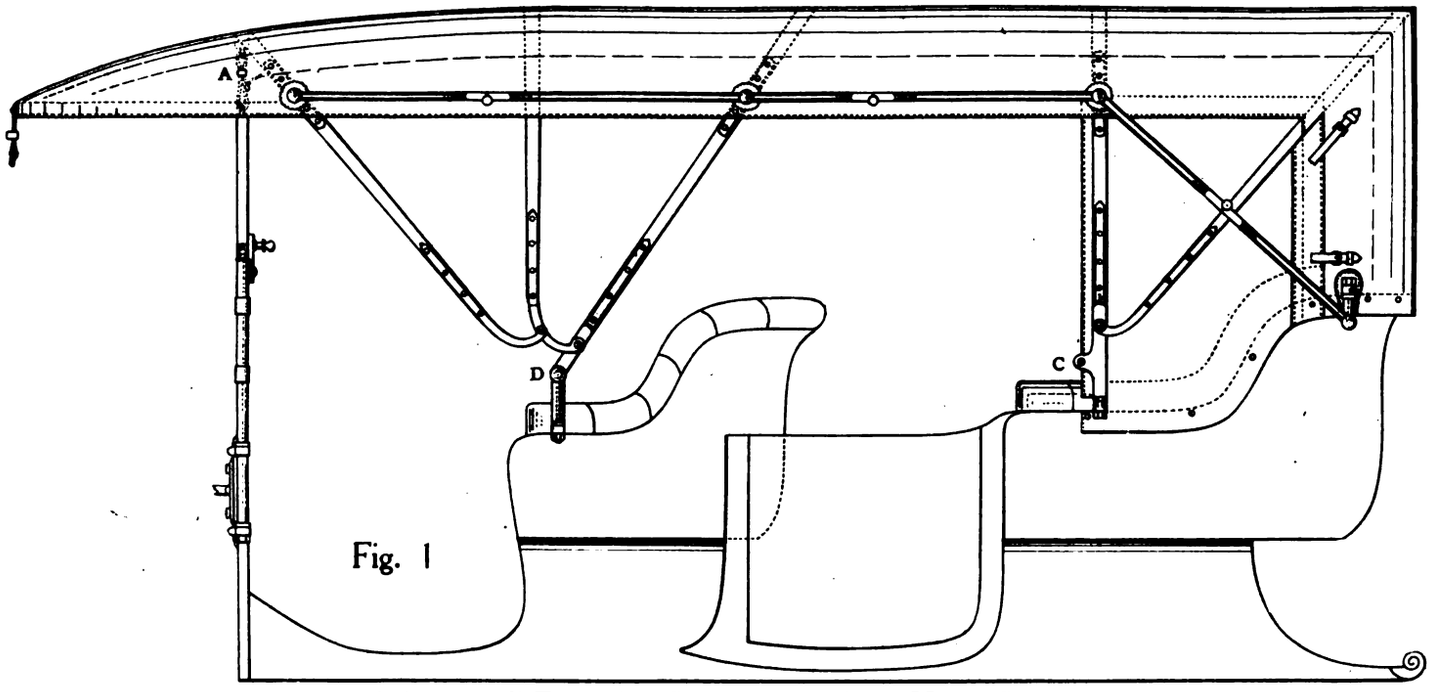
As canopy heads are important accessories to motor bodies, they, like the bodies they are fitted to, are a constant study to coach makers, to make them a fitting of neatness and usefulness, while the mechanical needs of their fitting up comes in for special study and fulfillment.

The darwing in outline of an open car given herewith, with canopy head fitted to it is of the most fashionable design at present in high class work of this type. The hood is in full extension, and side-joint locked from back to front. An improvement is made by projecting the front of the canopy beyond the wind shield light, both as a protection and to allow of the shield being carried up to the front bow, as at A, Fig. 1, to which the top of the light is fixed with loop straps and buckles.

The top light of the shield is worked on slides and held in position with thumb screws, and is made to hinge over, as at B in Fig. 2. The bows of the top are made by the timber bender to curve—width, length and strength.

The head hinges are made as in the elevation, Fig. 1, and silver plated; the slat irons are fixed to the outside of the bows with fine bolts, which are neater and better than screws. The slats on the inside are all nicely rounded up and finished in the natural wood, which, when varnished, blends with the rich fawn color of the waterproof covering material of the head.

The hind slat-iron fitting is forged to take two slats—an upright and an angled one. The upright slat-iron is made with a boss lug at C, the eye of which takes the hinge bolt of the front slats at D when the head is intended to fold up, and fall back into the body props. The side projection of the canopy body irons are shown in the front half section, Fig. 2, and on the half back section, Fig. 3. Of course, the whole head is detachable at the boss of the body prop stays, by undoing the hexagon nuts of the hinge irons. The hind head joint must of course be also taken from the body props by undoing the joint nut at E, Fig. 3.



Fitting a Full Extension Canopy to an Open Motor Car.
Described on this page.

The front projecting horizontal bow or slat is made to slide down the front of slat to which it is fixed. Light folding joints can be used for this purpose, or a rod fixed to the inside of the slat, to which a boss and hinge plate is fitted and fixed, and the slat hinged up, and the boss slid down the rod, until the front of the slot is level with the top of the head slat to which it is fixed, a light thumb screw is tapped into the boss to tighten the slat to the rod.

The head joint center prop irons are forged with feet on each side of the spindle, on which the boss centers of the joints work. The feet are fixed to the head slats with fine bolts, with their heads towards the waterproof covering to prevent tearing the material or working it into holes. The front horizontal slat is held down to the engine cover, or front of chassis, with straps, as is common in these heads. The height should measure from the top of the seat board line to the top of the head covering four feet, which will give ample seating room.

Digitized by Google

The canopy covering is made to line with the bend line of the slats, and the hind part made with ear corners, and fixed right round the body with studs and eyes. To the side of the

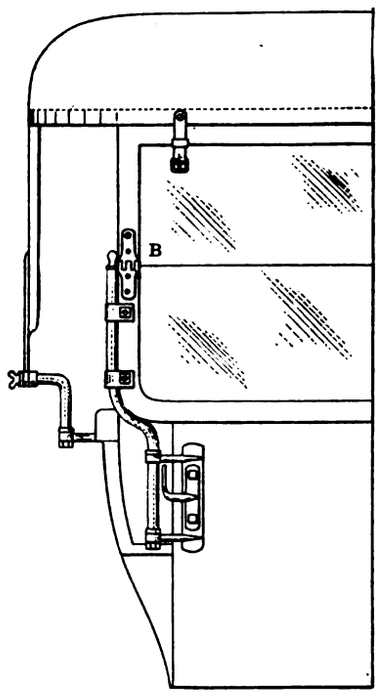


Fig. 2

ear corners is strapped a separate windage flap, which is fixed independently to the body and the bow. For the back light, celluloid is used instead of glass.

Fig. 2 shows how the wind shield is made and how the stand-

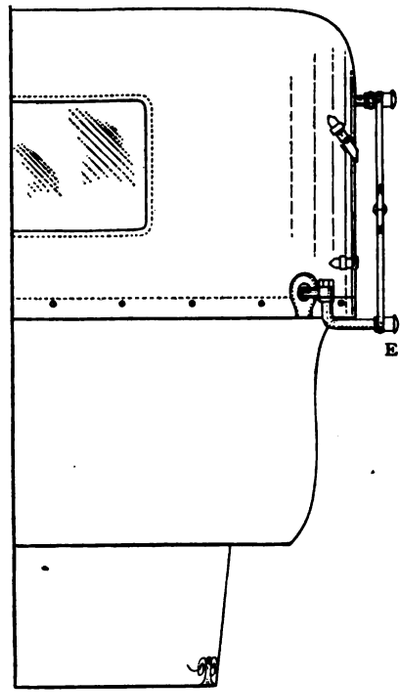


Fig. 3

ards are forged to take the fittings of the shield, and also the way in which they are made and fixed.

The drawing leaves very little to be further explained in making the canopy from every practical standpoint, while its setting out shows its proportionate appearance to the body in the carriage complete.

PAINTING THE AUTOMOBILE IN ALUMINUM BRONZE.

In some important American cities the observer will note the popularity of aluminum bronze as a pigment upon the "honk-honk" machines. While aluminum has a peculiar metallic color, not without a decided lustre it is at the same time a color, when skillfully applied to the surface, that imparts a look of strength to the vehicle without to any observable extent increasing its size and form. Indeed, its correct application to the surface has an illusive effect, in that the appearance of the surface decreases as to size and general outline. These properties are important when the automobile is to be painted, and they are doubtless the ones which strongly tend to influence public opinion in favor of aluminum. Preparatory to coating up with the metal the surface should be worked up sleek and fine, after the regulation processes, lead and the usual number of coats of roughstuff being employed. When in due time the roughstuff has been rubbed out, and the surface made even whit as perfect as the best skill and materials can make it, a ground work coat composed of artic or silver white, saddened out to match the aluminum, is applied with a camel's hair brush.

This white, or other fine grades of white, can be procured ground in japan so that nothing remains for the painter to do but thin it with turpentine, and add a teaspoonful of raw linseed oil to each pint of the white when thinned. One coat of this, if carefully laid, will suffice to furnish the requisite density of color. Then after sandpapering this coat, once it has dried hard and firm, using No. 00 paper, dust off and apply a coat of pale, rather thin body, finishing varnish. If this varnish is laid on in the morning it will in good drying quarters reach the right "tack" to receive the aluminum bronze late in the afternoon. Finishing varnish is chosen for the size for the reason that it holds a "tack" longer than the quicker drying varnishes, and additionally for the reason that the metal powder can be applied and made to hold in place upon the least perceptible "tack" of finishing varnish, whereas upon rubbing or hard drying varnish such a "tack" will fail to hold the metal uniformly.

Brush the powder on with a two-inch, or two and a half or even a three-inch brush, as the size of the surface may indicate, fluffing the aluminum on generously. Permit to stand over night, then gently rub surplus powder off with a ball of cotton and finish with a coat of pale or colorless finishing varnish of thin body.

COLOR UNIFORMITY IN AUTOMOBILE PAINTING.

Of all vehicles the automobile is one demanding uniformity in color. Its wide spreading surface gives the observer ample opportunity to study color effects. Little defects in the uniformity of shade or tone, and minor details in the general color scheme, all stand forth with the impudence of sore thumbs on the automobile body. It is of the first consideration, therefore, that in mixing a batch of color for the surface of a simple machine, or of several, if the same color is to be employed on one or all, that an amount be prepared sufficient to coat the one or several surfaces either one or two coats, as required. An insufficient quantity necessitates the preparation of an additional quantity which latter, when specially prepared colors are being used, may be one or more shades lighter or darker. In one of the best known carriage shops of New York, not long since, the writer noted an example strictly in line with the above. The body surface, painted by a western New York firm, carried two distinct shades of blue, thus spoiling the color effect completely. Either shade of blue, individually, was rich and beautiful enough to attract attention, but when placed without semblance of art in conspicuous contrast with each other the effect was fairly ludicrous.

The blues and greens are, if anything, more susceptible to this lack of uniformity than yellows and reds. Any employ-

Digitized by Google

ment of color schemes which illustrates the lack of color uniformity is inexcusable in automobile painting quite to the same extent that it would be in carriage painting.

There is little reason for making much ado about color harmony and stirring combinations when the efficiency of uniformity is permitted to prevail. Color harmony, let us understand thoroughly, depends primarily upon color uniformity, and without both of these essentials present to the fullest extent there can be no color combinations worth mentioning. These are the things which must be especially recognized in automobile painting. Ignoring them will simply serve to contribute to a continuance of the large share of misfit and fairly intolerable examples of painting everywhere observed upon the horseless carriage.

STRIPING THE AUTOMOBILE.

While a certain class of so-called cheap automobiles flaunt a considerable variety of striping, the rank and file of cars—that class, in fact, which really influences opinion and control styles—display a marked variety of effects.

Look along the fashionable driveways of New York and Philadelphia and you will see that plain and conservative striping effects are the rule. A straight line or two around the panels constitute the sum total of the ornamental work. And, after all, who shall say that this simple straight line style of striping is not, in an art sense, at any rate, really more ornamental than the ornate and jig-saw patterns which enjoyed a brief reign of popularity upon carriage work some years ago; and upon a cheap class of vehicles even now figures conspicuously?

Manifestly, upon the larger breadth and length of the automobile the straight line effects must be done with precision and delicate uniformity, otherwise they detract from rather than add to the general effect of the finish. The great difficulty in striping these large surfaces is that the lines to be smart and effective must be fine and true, yet devoid of any suggestion of mechanical exactness. The expert and experienced liner will appreciate all this, and be governed accordingly, but the beginner must learn it before his work on the automobile, with its prairie-like expanse of surface, will prove in the highest degree successful.

The failure to produce artistic striping effects upon the automobile is not infrequently due to a misconception of color possibilities. Wrong choice of striping colors, with reference to the field color or combination of colors, will result in color effects quite as disapproving as bad striping effects.

There is, of course, practically no limit to the colors which may be employed for striping purposes, so long as the uses of harmony and color adaptation are respected. To be an excellent striper one must be a good colorist, because an elegantly drawn line if cast upon a surface color to which it is an alien, or at least a stranger, will reign as an eye-sore only.

In striping the automobile surface the sword or dagger pencil will be found the most available tool. It takes the long and easy sweeps and outlines with fewer fillings of the pencil, is more surely controlled, and much more independent of the nerve centers of the workman. It appears to be naturally adapted to the requirements of the automobile surface.

CARRIAGE TRIMMING AND THE LADIES, GOD BLESS THEM.

In no branch of coach-work has such a development and such alteration been made as in the trimming department, says the Coachbuilders' Art Journal. It is a case of cherchez la femme. Woman is at the bottom of it. When the horse-drawn carriage reigned supreme, and there was no excitement to be had from the ordering of a vehicle, mere man was intrusted with the buying. And then, of course, if he wanted a green trimming, he ordered green; if he wanted claret, he ordered claret, and if he wanted blue, he ordered blue.

But the ordering of a "motor." That is different. Magnificent exhibitions, receptions, bands, trial runs, and all sorts of delightful things are mixed up with the purchase of a motor car. All sorts of interesting people, who have condescended to sell motor cars, may possibly be interviewed. Majors, colonels, generals, the sons of peers, possibly an earl. What influences bear with the fair sex? Who knows? Whatever may be their reasons, the ladies have come to the conclusion that it is decidedly they who ought to choose the motor body. And they are amongst us, indulging in their hobby of shopping to their heart's content; or, at least, as far as "hubby's" bank balance will allow. In these days, green is not merely green. It is almost any shade in the universe, and, words failing, coach builders are entrusted with a dainty piece of silk or chiffon culled from the salon of some fashionable modiste or from some West End chapellerie. We drop into French. It is unavoidable; the exigencies of the situation demand it.

But more seriously, this development in motor coach trimming has been a source of profit to the coach builder. The ladies' demand for delicate trimmings, for exquisite and harmonious laces, for those dainty and expensive knick-nacks, somewhat brutally named cantines, should be cultivated and encouraged to the top of its bent. It should be encouraged for all it is worth in motor coach building, and it should be diverted and adapted to every description of horse-drawn carriage. Such trimmings bear more profit, demand more variation from time to time, and are, moreover, sooner done with through wear and weather than the older and more sedately colored cloths. Let us encourage their use, they evidently mean more business.

FIRE FIGHTING MOTOR CAR.

Illustrated on page 149.

The first automobile fire fighter ever seen in the far West has lately been installed at Long Beach, Cal. The machine was designed by F. S. Craig, chairman of the Board of Public Works at Long Beach, and built by Thomas B. Jeffrey & Company at the Rambler factory, Kenosha, Wis. Many tests to determine the relative merits of horse-drawn and gasoline-driven fire apparatus were made before this car was selected.

The motor is of the four-cylinder vertical type; the wheel base is 120 inches. The regular 1908 Rambler tire equipment is used, and the car is guaranteed to operate under a weight of 3,000 pounds at a speed of at least 35 miles an hour. Side chain drive is used, with three forward speeds and reverse. The chemical tanks are double 80-gallon receptacles and are placed under the forward seats. The rear portion of the car is used to carry 20 feet of hose. The coil of chemical hose is located just back of the seats. Hand fire extinguishers are carried on the running board. Five men can ride.

A special starting device has been provided in the form of an inclined platform, so that when the alarm is received the platform is tipped and the car glides out of the station without one second's delay.

SAD FATE OF CARL LOUIS WEIGLEIN.

Carl Louis Weiglein, secretary of the Monarch Carriage Goods Co., of Cincinnati, and son of M. C. Weiglein, president of the company, was drowned in the Ohio River June 30th when he and his friend Spellman tried to ride the rollers in the current behind the steamer Princess. The canoe capsized and Weiglein struggled in the water for a while and then sank. Spellman clung to the overturned canoe and was rescued. Weiglein was 21 years old. At the time of the accident his parents were making a pleasure trip through the east. Young Weiglein had hosts of friends and gave promise of a bright future. The sympathy of the entire trade goes out to the afflicted family.

Digitized by Google

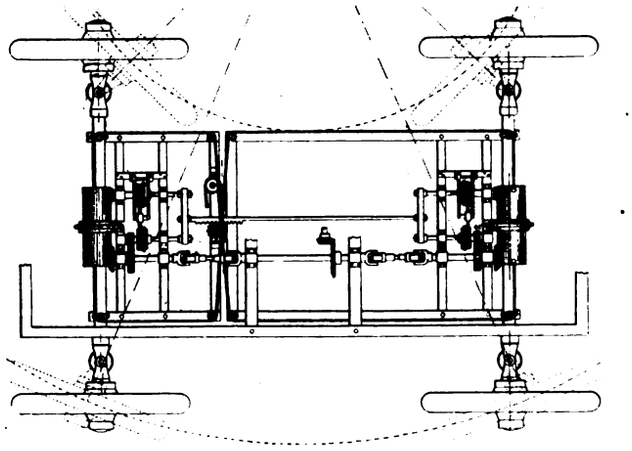
DRIVE AND STEERING GEAR FOR AUTOMOBILE VEHICLES.

Edward P. Cooper, of Paw Paw, Mich., was recently granted a patent on a drive and steering gear for automobiles, which was assigned to James Cooper, of Hillsdale, Mich.

The object of the invention are, first, to provide in a vehicle an improved steering gear by which the wheels are maintained in their proper relations to prevent skidding in turning the vehicle. Second, to provide in a motor vehicle an improved driving gear. Third, to provide in a motor vehicle an improved driving gear in which the wheels are driven on their proper relative speeds in turning to prevent skidding.

Our illustration is a detail plan of a structure embodying the features of the invention, the body being removed and part of the body frame being broken away, the relative positions assumed by the wheels in making a turn being indicated by dotted lines.

The axles are rigidly connected to the front and rear axle frames. Within the axles are tubular driving shafts having gears at their outer ends arranged to mesh with the gears



mounted on the spindle pivots. The spindles are hollow and are provided with suitable bearings for the spindle shafts, which are provided with gears on their inner ends. Through this connection the spindle shafts are driven and the spindles are left free to swing on their pivots. The outer ends of the shafts are preferably squared and adapted to engage the sockets in the cap-plates on the outer ends of the hubs of the wheels, which are provided with suitable bearings on the spindles.

Within the driving shafts are arranged steering shafts, which are connected to the pivots for the wheel spindles by the gears. On the inner ends of the steering shafts are wheels having radially-arranged pins on the peripheries thereof. Supported above these wheels are plates curved in cross section to correspond to the peripheries of the wheels, having grooves in its inner face.

To prevent variations in the tension on the steering cables in the movement of the axle frames relative to each other the shaft is located above the swivel connections for the frames. The steering rod is connected to the shaft by the sprocket, which permits the locating of the steering rod at any desired point. The steering rod is preferably provided with a flexible portion consisting of universal joints, having a slip connection, which permits of the movement of the body frame by which the upper section of the steering rod is carried.

MOTOR OMNIBUSES IN BERLIN.

The report for 1907 of the General Omnibus Company of Berlin, which is the largest transport undertaking of its kind in Germany, shows that the company carried over 5,000,000 passengers in 1907 in excess of the preceding year, the figures being 138,800,000 as against 128,000,000 in 1906. This represents on increase of 4½ per cent., while the traffic receipts advanced by 10 per cent. Owing to the greater increase in expenses than in receipts, and after allowing for depreciation, the figures show a loss of about $130,000 for the year. The directors' report states that apart from the growth in general expenses the cost of maintaining and improving the motor omnibuses nearly reached 50 per cent. of the original cost of purchase. The company has not freedom of action in fixing of fares, as those are subject to the sanction of the police authorities.

AUTOMOBILE STATISTICS OF GERMANY.

Consul George Nicholas Ifft, of Annaberg, says that according to official statistics just published there were on January 1, 1908, in the German Empire 36,022 motor vehicles, of which 34,244 were passenger vehicles and 1,778 were freight vehicles. The consul presents other details as follows:

This is an increase of about 33 per cent. during the year 1907. Of the passenger vehicles 19,573, or more than half, were motor bicycles. The increase was much larger, proportionally, in South Germany than North Germany, being but 17.2 per cent. in Prussia as against 84.8 per cent. in Bavaria and 148.1 per cent. in Hesse. In the city of Berlin the increase in the number of motor vehicles for the year was only 6, or 0.2 per cent. Of the passenger vehicles, 14,046 were used for business or professional purposes and 13,771 as pleasure and sporting vehicles. During the year 5,686 motor vehicles passed the frontier for temporary use for touring purposes in the Empire.

Statistics as to accidents due to motor vehicles are given for the year from October 1, 1906, to September 30, 1907, during which time there were 4,864 such accidents, in which 145 were killed and 2,419 injured. The figures for the dead do not include those who died after the accident as a result of their injuries, but only those killed on the spot.

There are two degrees of dishonesty recognized by every one; the one who would steal your purse; the other would not pay an honest debt.

Wants

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, five cents a word. Initials and figures count as words. Minimum price, thirty cents for each advertisement.

HELP WANTED.

Wanted—Foreman trimmer for carriages and automobiles, to take charge of shop. "W. C.," care The Hub, 24 Murray St., New York City.

Wanted—Carriage painters, one first-class striper and letterer, one first-class body finisher; steady work all year round. Best wages. Temperate men only apply. McLaughlin Carriage Co., Oshawa, Canada.

SITUATIONS WANTED.

Wanted—Situation by Foreman Trimmer with plenty of experience and best reference. Address "Y. K.," care The Hub, 24 Murray St., New York City.

Wanted—Position as superintendent or manager of carriage factory making medium or high grade goods, by a man who can qualify and furnish A-1 references as to character and ability. Address "Business," care The Hub, 24 Murray St., New York City.

Wanted—Position by an experienced foreman blacksmith, on medium or good grade work. Organizer; honest, reliable. Wishes permanent position with a good manufacturer. References A-1. Address Box 180, care The Hub, 24 Murray St., New York City.

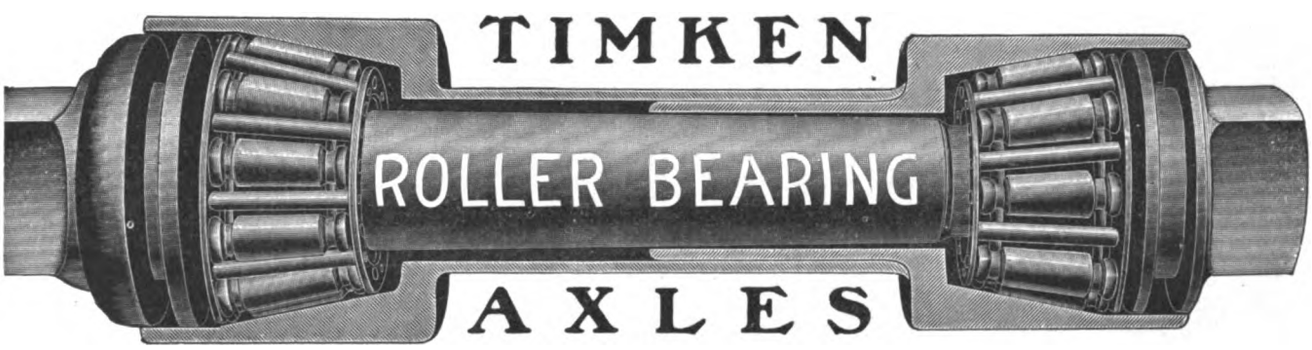
PATENTS.

Patents—H. W. T. Jenner, patent attorney and mechanical expert, 607 F Street, Washington, D. C. Established 1883. I make an examination free of charge and report if a patent can be had, and exactly how much it will cost. Send for circular.

Digitized by Google

Additional Evidence

from a practical source, where every kind and phase of hauling is encountered in the day's work and the saving in wear and tear, on vehicles as well as live stock, through reduced friction, shows on the credit side of the ledger.



The Timken Roller Bearing Axle Company, Allegheny, Pa.
CANTON, OHIO.

Gentlemen: We have five large moving vans which were built for us, five years ago, by Fulton & Walker Co., of Philadelphia, on which are your axles, and they are as good to-day as they were the day they were put on. We have no trouble with them whatever. We use two horses where the other Transfer Companies use three horses, with just as good results. We oil them about every two months.

Yours respectfully,
ALLEGHENY TRANSFER & STORAGE CO.
SAM'L E. DONALDSON, Manager.

A saving of **Thirty-three and a third per cent.** in hauling power, with no deterioration or wear after five years' constant use, and with practically no care or attention.

The statement "We have no trouble with them whatever" would alone justify the use of

Timken Roller Bearings and Axles

They make satisfied customers, and satisfied customers guarantee profitable and permanen business for the vehicle builder.

Facts, figures and full particulars on request. Write to-day.

The Timken Roller Bearing Axle Co.

CANTON, OHIO

BRANCHES: 10 East 31st Street, New York; 429 Wabash Avenue, Chicago

Digitized by Google

NEW YORK CITY

THE HERMITAGE

A CLUB HOTEL FOR MEN

The name tells the story.

Seventh Ave. and Forty-second St.

Junction of Broadway.



Restaurant on the street floor —a restaurant where ladies are welcome.

Every other part of the house exclusively for men.

Telephones in every room.

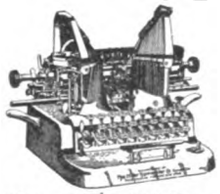
Respectful, quiet, obedient and alert Japanese servants.

Bedroom and bath **$2.00** a day upward.

Send for Booklet.

T. F. PADDELL, Proprietor

You Can Easily Operate This Typewriter Yourself



Don't worry your correspondent.

Don't write him anything by hand that takes him time to make out—that may leave him in doubt—that he can't easily read.

And don't fill out legal papers or card memos—or make out accounts or hotel menus in your own handwriting.

It looks bad, reflects on your standing, makes people think you can't afford a stenographer, and is sometimes ambiguous.

You can write out your letters—make out an abstract—fill in an insurance policy—enter your card memos—make out your accounts or a hotel menu—or do any kind of writing you need, on *any* kind, size or thickness of paper, and *space* any way you want on

You can write any of these things yourself if you do not happen to have a stenographer.

The OLIVER Typewriter

The Standard Visible Typewriter

For you can easily learn, with a little practice, to write just as rapidly, and as perfectly, as an expert operator on the OLIVER. Because the OLIVER is the *simplified* typewriter. And you can see every word you write. About 80 per cent, *more durable* than any other typewriter, because it has about 80 per cent. *less wearing points* than most other typewriters.

Eighty per cent. *easier* to write with than these other *complicated, intricate machines* that require "humoring"—technical knowledge—long practice and special skill to operate.

Than machines which cannot be adjusted to any special space—with which it is impossible to write abstracts, insurance policies, or odd-size documents except you buy expensive *special* attachments requiring experts to operate.

You can adjust the OLIVER to any *reasonable space*—you can write on *any* reasonable size and thickness of paper, right out to the very edge, without the aid of *any expensive attachment* or special skill, and your work will be neat appearing, legible and clear.

For the OLIVER is the typewriter for the doctor, the lawyer, the insurance agent, the merchant, the hotel proprietor—or any man who does his own writing.

Write us now for our booklet on the *simplified* features of the OLIVER

The Oliver Typewriter Company

310 Broadway **New York City, N. Y.**

INDEX TO ADVERTISERS.

American Roller Bearing Fifth Wheel Co. 18
Auxiliary Spring and Ventilating Button Co. 5

Barnes & Co., W. F. & John 18
Beaudett Co., O. J. 18
Beckwith & Chandler Co. 2
Bentel & Margedant Co. 6
Bertram & Lamoreaux 24
Bimel-Ashcroft Mfg. Co. ..... 3d cover
Bradley & Son, C. C. 23

Carriage Opportrunity 24
Central Bureau of Engraving 16
Columbus Bolt Works ..... 4th cover
Consolidated Rubber Tire Co. 2
Crane & MacMahon ..... 2d cover

Dalzell Axle Co. 21
Defiance Machine Works 17
Devoe, F. W., & Raynolds Co., C. T. ..... 3d cover

Eagle White Lead Co. 6
Eccles Co., Richard 19
English & Mersick Co., The 3

Fitch Gear Co. 22
Flexible Shaft and Tool Co. 6

Gerhab, Jacob 22
Gifford & Son, John A. 23
Goodrich Co., B. F., The 5
Goodyear Tire and Rubber Co. 4

Hankinson, J. V. 18
Harland & Son, Wm. 1
Hoopes Bro. & Darlington, Inc. ..... 2d cover

Jones & Co., Phineas 15

Keystone Forging Co. 21
Kiblinger Co., W. H. 21
Kokomo Rubber Co. ..... 4th cover

Landsman Motor Co. 16
Landers Bros. Co. 15

Masury & Son, John W. 2
Maxwell & Fitch Co. ..... —
McKinnon Dash Co. ..... 4th cover
Miller Bros. 23

National Safety Fifth Wheel Co. 15
National Spring and Wire Co. 1
Nobles & Hoare ..... —

Ohio Seat Co. 23

Palm, Fechteler & Co. 1
Peerless Buggy Top Co. 1
Pomeroy & Fischer ..... —
Porter, H. K. 23

Russell, Burdsall & Ward Bolt and Nut Co. 22

Schacht Mfg. Co. 18
Sheldon Axle Co. 21
Smith & Co., Edw. 4
Spring Perch Co. 21
Standard Ball Axle Co. 15
Standard Oil Cloth Co. 17
Stein Double Cushion Tire Co. 3
Strelinger Marine Engine Co. 24

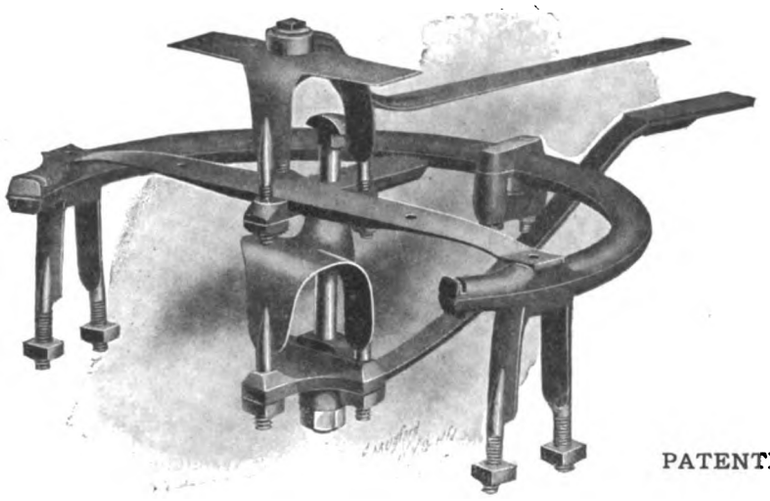
Timken Roller Bearing Axle Co. 13

Valentine & Company 4

West Tire Setter Co. 4
Wiese & Co., Wm. 23
White, H. F. 2
Wilcox Mfg. Co., D. 15
Willey Co., C. A. ..... 2d cover
Woodman, Joel H. 15

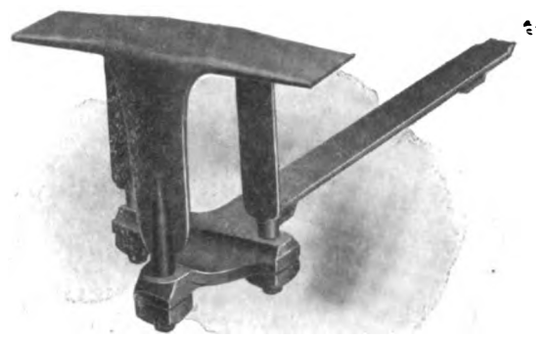
Zwick & Greenwald Co., The ..... 3d cover

Digitized by Google



No. 1902. Single Reach.

PATENTED.



No. 35½ and 41¾. Perch Heel.

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MFG. CO.

MECHANICSBURG, PA.

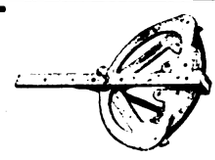
IT DOES THE TRICK R. F. D. SPECIAL



This axle runs easier than any other, and requires no attention. IT'S A WONDER Ask why. We can prove it.

STANDARD BALL AXLE WORKS, Lancaster, Pa.

National Safety Short-Turning Fifth Wheels
Are Giving Universal Satisfaction.
Ask Your Dealer for Them.
National Safety Fifth Wheel Co., Lancaster, Pa.

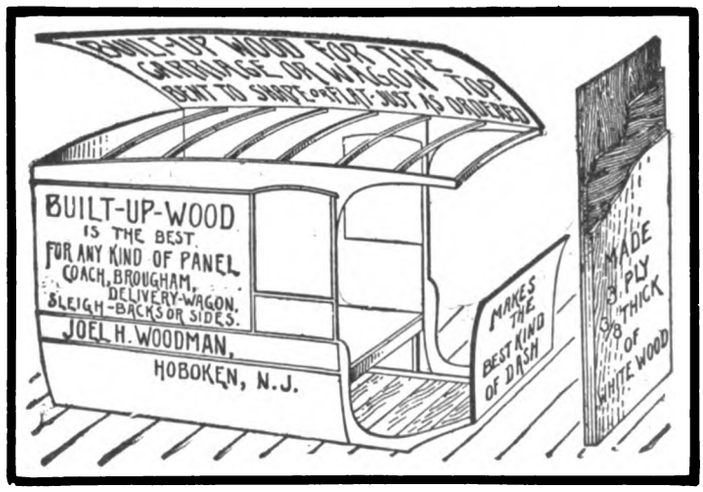


Style C.

Jones Wheels
BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.



LOWEST PRICES. *PROMPT SHIPMENTS.* *SUPERIOR QUALITY.*

TOLEDO **LANDERS BROTHERS CO.** **BOSTON**

We Are the Pioneers in the

SHEETINGS WEBBING — 32 Grades Single Double Three-Ply — **BUCKRAM** LINE — Four-Ply and Canvas Lined — DUCKS WADDING

Celluloid Sheets, Enameled Muslins, Drills and Ducks

SCRIM. *RATTAN MOULDING.* *BATTS.* *OILED DUCK.* *OIL CARPET.*

Digitized by Google

HOTEL CUMBERLAND

NEW YORK

Southwest Cor. Broadway at Fifty-fourth St.

Near 50th St. Subway and 53d St. Elevated Stations and accessible to all surface lines.



Headquarters for Carriage and Automobile Trade

Ideal Location, Near Theatres, Shops and Central Park.

NEW AND FIREPROOF

STRICTLY FIRST-CLASS IN EVERY RESPECT

All Outside Rooms. No Carpets. All Hardwood Floors and Oriental Rugs.

European Plan.

Transient Rates, **$2.50** with Bath, and up.

Restaurant Unexcelled. Prices Reasonable.

SEND FOR BOOKLET.

HARRY P. STIMSON, *Formerly with Hotel Imperial.*

R. J. BINGHAM, *Formerly with Hotel Woodward.*

Build Your Own Auto

A GASOLINE ENGINE TO FIT ANY BUGGY or WAGON

LANDSMAN MOTOR CO.

908 Hickory St. ST. LOUIS, MO.

Write for Catalogue.

MANUFACTURERS

DESIRING FIRST-CLASS ILLUSTRATIONS OF THEIR PRODUCT, AT REASONABLE PRICES, SHOULD PERMIT US TO SUBMIT AN ESTIMATE.

Central Bureau of Engraving

COMMERCIAL ENGRAVERS

157-159 WILLIAM STREET, NEW YORK

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

AXLES, ETC.
- Dalzell Axle Co., South Egremont, Mass.
- Sheldon Axle Co., Wilkes-Barre, Pa.
- Standard Ball Bearing Axle Co., Lancaster, Pa.
- Timken Roller Bearing Axle Co., Canton, Ohio.

BODIES, SEATS, ETC.
- Beaudett Co., O. J., Pontiac, Mich.
- Woodman, Joel H., Hoboken, N. J.

BODIES IN THE WHITE.
- Miller Bros., Amesbury, Mass.

BOLTS AND NUTS.
- Columbus Bolt Works, Columbus, O.
- Russell, Burdsall & Ward Bolt and nut Co., Port Chester, N. Y.

CARRIAGE CLOTHS.
- Wiese & Co., Wm., New York City.

CARRIAGE FORGINGS.
- Cortland Forging Co., Cortland, N. Y.
- Eccles Co., Richard, Auburn, N. Y.
- Keystone Forging Co., Northumberland, Pa.

CARRIAGE HARDWARE.
- Gifford & Son, John A., New York.

CARRIAGE GOODS.
- Crandal, Stone & Co., Binghamton, N. Y.
- English & Mersick Co., New Haven, Conn.
- Gifford & Son, John A., New York.
- Wiese & Co., Wm., New York.

DASHES, FENDERS, RAILS, ETC.
- McKinnon Dash Co., Buffalo, N. Y.

ENGRAVING.
- Central Bureau of Engraving, New York City.

FIFTH WHEELS.
- American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
- National Safety Fifth Wheel Co., Lancaster, Pa.
- Wilcox Mfg. Co., D., Mechanicsburg, Pa.

FINISHED VEHICLES.
- Schacht Mfg. Co., The, Cincinnati.

JACKS.
- Hankinson, J. V., Franklin, Ohio.

LAMPS.
- Gifford & Son, John A., New York.
- Stevens & Sackett Co., New Haven, Conn.

MACHINERY AND TOOLS.
- Barnes Co., W. F. & John, Rockford, Ill.
- Bentel & Margedant Co., Dayton, Ohio.
- Defiance Machine Works, Defiance, Ohio.
- Maxwell & Fitch Co., The, Rome, N. Y.
- Porter, H. K., Everett, Mass.
- Strelinger Marine Engine Co., Detroit, Mich.
- West Tire Setter Co., Rochester, N. Y.

MISCELLANEOUS.
- Bertram & Lamoreoux, Detroit, Mich.
- Landers Bros. Co., Toledo, Ohio, and Boston, Mass.
- Standard Oil Cloth Co., New York.

MOTORS, AUTO PARTS, ETC.
- Kiblinger Co., W. H., Auburn, Ind. Mich.

ORNAMENTS.
- Palm, Fechteler & Co., New York.

RUBBER TIRES.
- Consolidated Rubber Tire Co., New York City.
- Goodrich Co., B. F., Akron, Ohio.
- Goodyear Tire and Rubber Co., Akron, Ohio.
- Kokomo Rubber Co., Kokomo, Ind.
- Stein Double Cushion Tire Co., Akron, Ohio.

SHAFT COUPLINGS AND ANTI-RATTLERS.
- Bradley & Son, C. C., Syracuse, Eccles Co., Richard, Auburn, N. Y.

SPOKES.
- Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.

SPRINGS AND GEARS.
- Auxiliary Spring and Ventilating Button Co., Detroit, Mich.
- Fitch Gear Co., Rome, N. Y.
- National Spring and Wire Co., Albion, Mich.
- Spring Perch Co., Bridgeport, Conn.

TOPS.
- Peerless Buggy Top Co., Cincinnati, Ohio.

TRIMMING MATERIALS.
- Stevens & Sackett Co., New Haven, Conn.

VARNISHES, PAINTS AND JAPANS.
- Beckwith-Chandler Co., Newark, N. J.
- Devoe, F. W., and C. T. Raynolds Co., New York City.
- Harland & Son, Wm., London and New York.
- Masury & Son, John W., New York and Chicago.
- Nobles & Hoare, London, England.
- Pierce Co., F. O., New York City.
- Pomeroy & Fischer, New York City.
- Smith & Co., Edw., New York City.
- Valentine & Company, New York, Chicago, Boston, Paris.
- Willey Co., C. A. Hunter's Point, New York City.

WHITE LEAD.
- Eagle White Lead Co., Cincinnati, Ohio.

WHEELS.
- Crane & MacMahon, New York.
- Gifford & Son, John A., New York.
- Hoopes Bro. & Darlington, West Chester, Pa.
- Jones & Co., Phineas, Newark, N. J.
- Zwick & Greenwald Wheel Co., Dayton, Ohio.

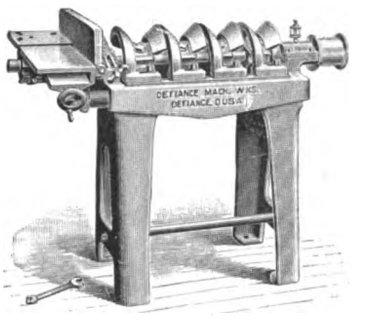
WHEEL STOCK, BENT WOOD, ETC.
- Crane & MacMahon, New York.

Digitized by Google

"DEFIANCE" WOOD-WORKING MACHINERY

Invented and Built by

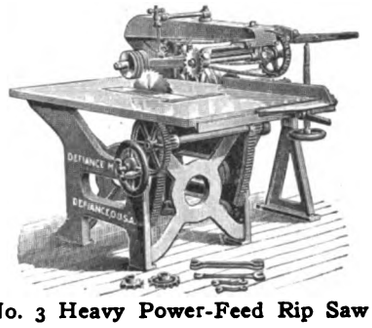
The Defiance Machine Works Defiance, Ohio



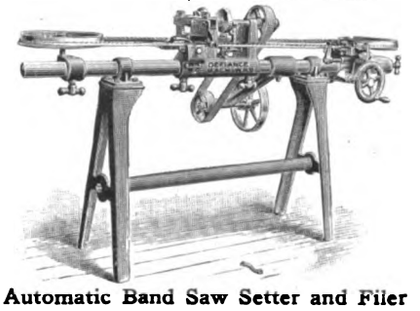
No. 1 Rounder, with Buzz Planer

For Making

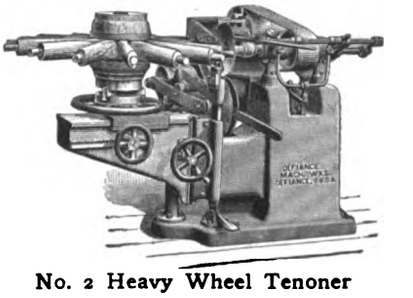
Hubs, Spokes, Wheels, Wagons, Carriages, Rims, Shafts, Poles, Neckyokes, Singletrees, Hoops, Handles of all Kinds, Insulator Pins, Bobbins, Spools, Table Legs, Oval Wood Dishes and for General Wood Work.



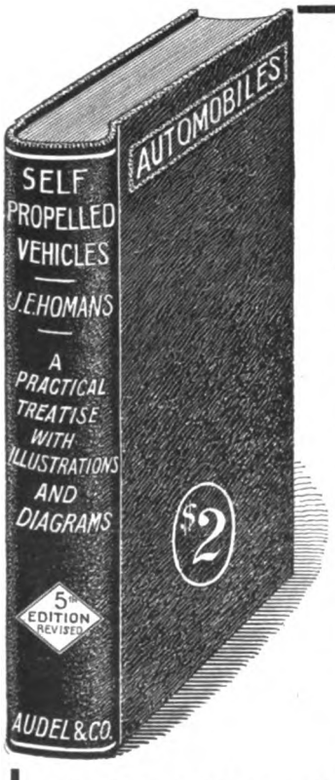
No. 3 Heavy Power-Feed Rip Saw



Automatic Band Saw Setter and Filer



No. 2 Heavy Wheel Tenoner



"Self-Propelled Vehicles"

Fifth Edition, Revised.

A practical treatise on the theory, construction, operation, care and management of all kinds of Automobiles.

By

JAMES E. HOMANS, A.M.

Contains 608 pages and upwards of 500 illustrations and diagrams, giving the essential details of construction and many important points on the successful operation of the various types of motor carriages driven by steam, gasoline and electricity.

This work is now the accepted standard, explaining the principles of construction and operation in a clear and helpful way. This book will be sent postpaid to any address in the United States, Mexico or Canada upon receipt of $2.00.

Address

TRADE NEWS PUBLISHING COMPANY

24 Murray Street, New York

MERITAS

CARRIAGE ENAMELED **OIL CLOTH**



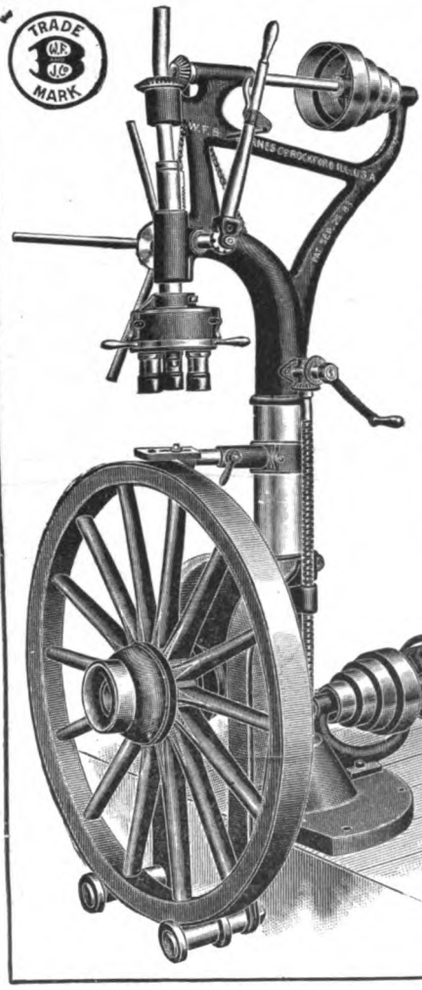
You can't go wrong by putting on MERITAS when you come to the oil-cloth. It's crack and peel-proof and lasts as long as the carriage. Guaranteed.

Standard Oil Cloth Co.

320 Broadway, NEW YORK.

Please mention "The Hub" when you write.

Digitized by Google



A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.

The Invincible Schacht

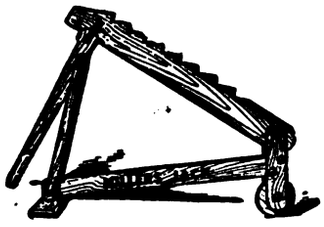
A WONDER IN A HUNDRED WAYS



MODEL K.

The simplest, most practical, efficient and economical car ever built. Sixteen h.p.. Friction Drive. Any speed up to thirty miles per hour. All parts interchangeable and thoroughly "getatable." Large wheels with cushion tires overcome all tire troubles. Almost noiseless and rides like a pneumatic. The greatest selling proposition on the market. Live agents wanted everywhere. Prompt deliveries and thorough satisfaction guaranteed. Send at once for catalogue, etc., and be convinced.

The SCHACHT MFG. CO., Cincinnati, O.



Made in four sizes, Nos. ¾, 1, 2, and 3.

JACKS FOR BUGGIES AND WAGONS

Miller Patent Wagon Jack Made by

J. V. HANKINSON,

Successor to THOS. MILLER,

FRANKLIN, OHIO.

Write for particulars and prices.

Automobile Manufacturers

Write us for prices on Limousine, Touring Car or Runabout Bodies before placing contracts for your requirements.

Our Facilities enable us to handle any size order

GOOD WORK AND RIGHT PRICES.

O. J. BEAUDETT CO.

Pontiac, Michigan

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.

745 THIRD AVE., BROOKLYN, N. Y.

Digitized by Google

ECCLES BALL-BEARING COUPLINGS

The cut shows our coupling bolted to axle, and the form our flat leather bushing takes when the shafts are placed and locked in the coupling. The leather can be securely fastened in by the user, by driving a soft wire nail through the small hole we drill, which clinches it.

When the shafts are removed, the bushing does not come out, but stays in the Coupling where it belongs. NO LOST BUSHINGS WHEN YOU USE OUR COUPLINGS.

We would like to send you our circular and have you try our Couplings. They will save you money.



Patented Nov. 25, 1902.

The spring is pivoted at the front so that it can be turned forward out of the way of the wrench while clipping the Coupling to the axle.

These are two of the good points, but there are plenty more desirable features in our Couplings.

We also have a Catalogue showing our full line of CARRIAGE and WAGON FORGINGS, all of which we make

RICHARD ECCLES COMPANY, AUBURN, N. Y.

THE KALAMAZOO TIRE SETTER

Made for hand or power. Cut shows power machine.

Weighs 1275 Lbs.

Will set all tires from light buggy tires up to wagon tires 3 x3-4.

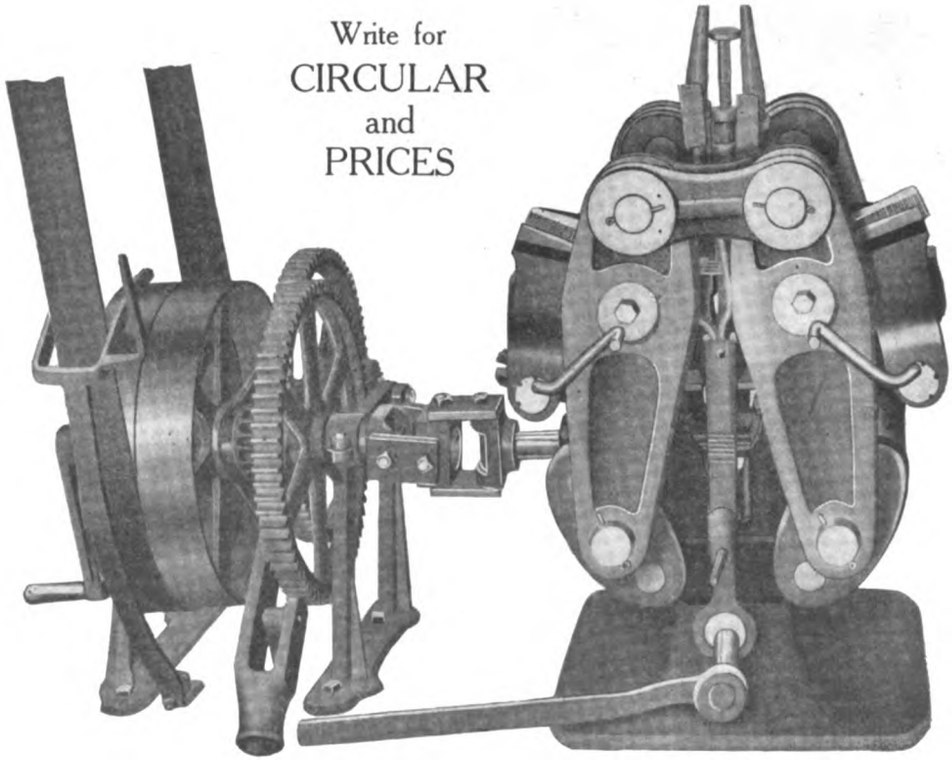
Will set

20 Tires Per Hour

Almost indestructible.

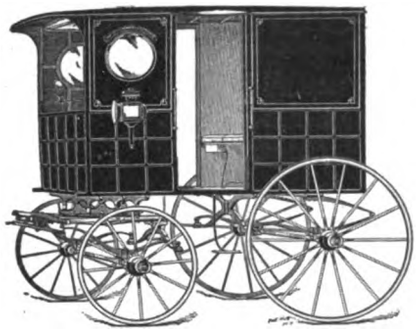
Will not break or wear out.

Write for CIRCULAR and PRICES

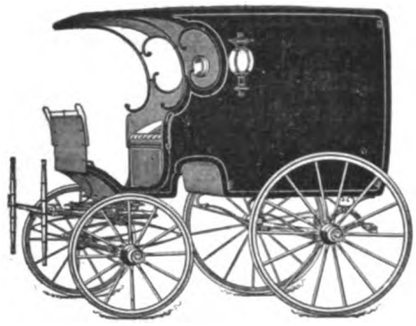


KALAMAZOO TIRE SETTER CO., Kalamazoo, Mich.

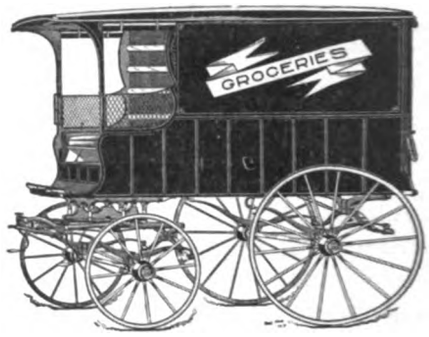
Digitized by Google



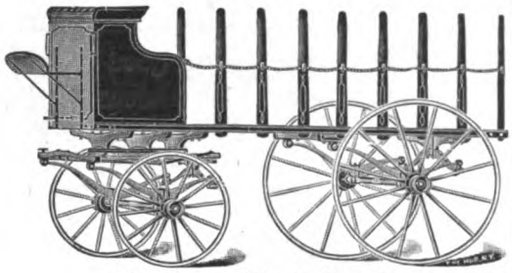
No. 112.—Milk Wagon.



No. 111.—Altman Wagon.



No. 113.—Grocery Wagon.



No. 122.—Flour Truck.

Electrotypes

of the vehicles presented on this page will be forwarded on receipt of

75 cts.

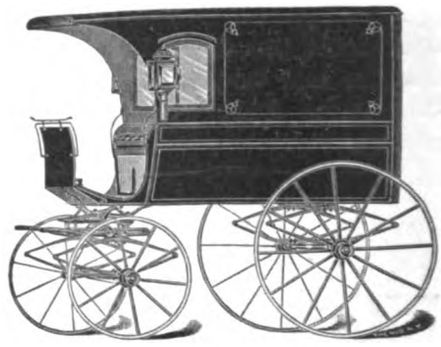
for each cut, to any address. Postage prepaid.

Catalogue

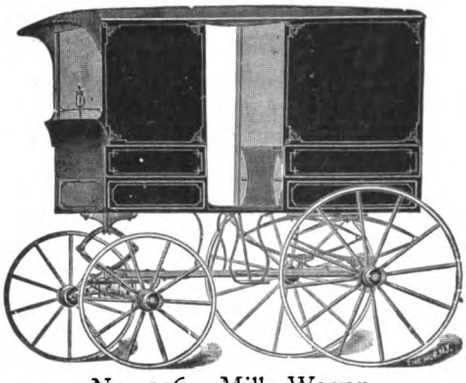
containing nearly 200 illustrations of carriages, wagons, sleighs, and miscellaneous cuts will be sent upon application.

Trade News Publishing Co.

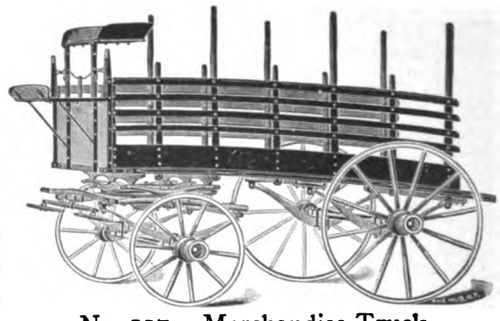
24-26 MURRAY ST.
NEW YORK



No. 115.—Delivery Wagon.



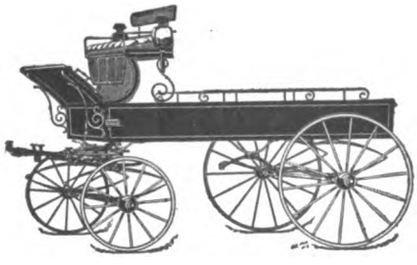
No. 116.—Milk Wagon.



No. 117.—Merchandise Truck.



No. 114.—Delivery Wagon.



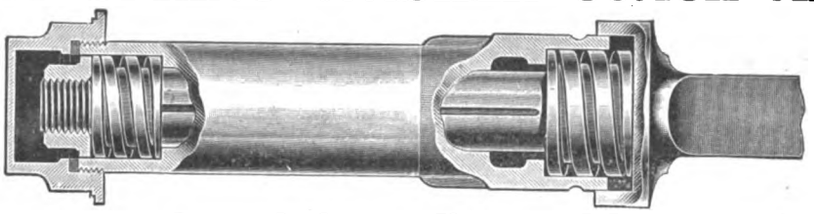
No. 124.—Delivery Wagon.



No. 118.—Ambulance.

Digitized by Google

PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

DALZELL AXLE CO., South Egremont, Mass.



GET THE AGENCY

MOTOR VEHICLES

11 H.P., $375.00, 13.6 H.P. $450.00

Air Cooled; Double Cylinder; Solid Rubber Tires. Thirty miles on one gallon of gasoline. Thirty miles per hour. Fully Guaranteed. **Ask for Catalogue 161.**

H. W. KIBLINGER CO., Auburn, Ind.



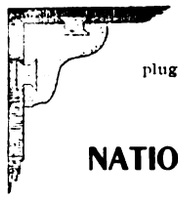
Axles

A complete line of Wagon and Carriage Axles—Common, Concord, Farm Wagon, Half Patent, Long Distance, Collinge and Mail Patent. Empire Ball Bearing Axles. Made only by

SHELDON AXLE COMPANY, Wilkes-Barre, Pa.

The Best and Easiest Riding Springs, for both Light and Heavy Vehicles. We have had very great success with our Automobile Springs : : : : : :

Springs



Plugless Piano Bodies

Corners absolutely tight and can not open. No plugs to work out or show through the varnish.

This body sells buggies.
Woudn't it pay you to use it?

NATIONAL BODY & BOX COMPANY
PONTIAC, MICH.

DON'T TRUST TO LUCK
ADVERTISE IT IN
THE HUB

CARRIAGE SPRINGS

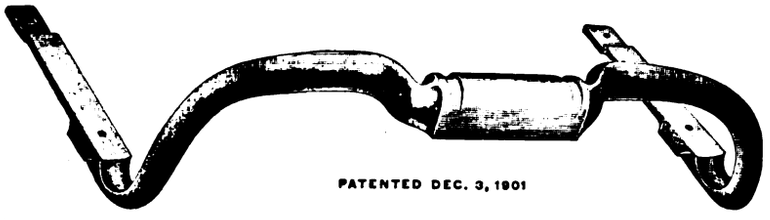
OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

THE BEST THAT CAN BE MADE

SPRING PERCH CO.
BRIDGEPORT, CONN.



PATENTED DEC. 3, 1901

THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland Pa.

Please mention "The Hub" when you write.

Digitized by Google



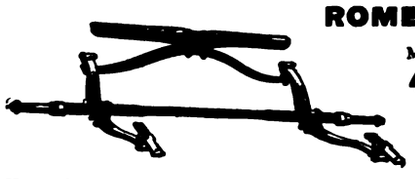
BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.

FITCH GEAR CO.

ROME, N. Y., U. S. A.



Manufacturers of over

40 STYLES of GEARS

From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.

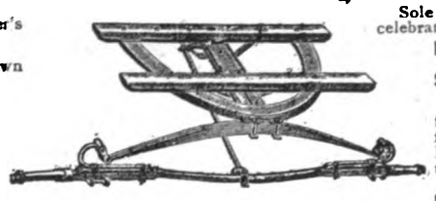
Sole Manufacturers of the celebrated

Kramer Lowdown Short Turn Gear

It is the Finest Gear for Drop Centre-Body for Milk, Bakers' or Butchers' Wagons on the market.

Send for our No. 22 Catalogue, just out.

Kramer's Patent Lowdown Gear.



C.H.A.T.

Helps Secure Situations.

Carriage, Harness and Accessory Traveling Salesmen's Association

OF THE UNITED STATES.

All Commercial Travelers in Above Lines Eligible. No Others. Pays Death Benefits.

Membership Fee, - - - $3.00

Annual Dues, - - - - 1.00

Employers of Traveling Men eligible to join as associate members on payment of $5.00, and are exempt from all further dues.

Manufacturers of carriages, harness or goods that enter into their construction, jobbers of same, can secure good, reliable and efficient salesmen through our Association, as the members of this Association have the best facilities for knowing all about men who are seeking situations, and none will be recommended unless they are first class and worthy of support.

Salesmen in need of a situation, or manufacturers in need of a salesman, address for further information,

L. H. KRONFELD, Secretary.

Box 57, Mount Vernon, N. Y.

HOTEL WESTMINSTER

Irving Place and 16th Street

NEW YORK CITY.



One block from **Union Square**, Surface, Elevated and Subway Cars. Midway between leading **Wholesale** and **Retail Stores** and **Theatres**, and yet far enough from Broadway to insure **Comfort** and **Freedom** from the noise and bustle of that thoroughfare.

Perfectly Quiet Locality and **Home-like** in every respect.

EXCELLENT CUISINE, EUROPEAN PLAN.

Single Rooms, $1.00 per day and up. Room with Bath, $2.00 per day and up. Parlor, Bedroom and Bath, $3.00 per day and up.

SEND FOR BOOKLET.

O. H. FOSTER, Proprietor.

Headquarters for "The H. D. Smith & Co.'s" Carriage and Wagon Forgings

JACOB GERHAB

DEALER IN

Carriage Cloths, Leathers and Trimmings, Wagon and Cart Material

Salable prices and all information cheerfully furnished

158, 160, 162 and 164 North Third Street PHILADELPHIA, PA.

Digitized by Google

THE BRADLEY SHAFT COUPLING



OPEN

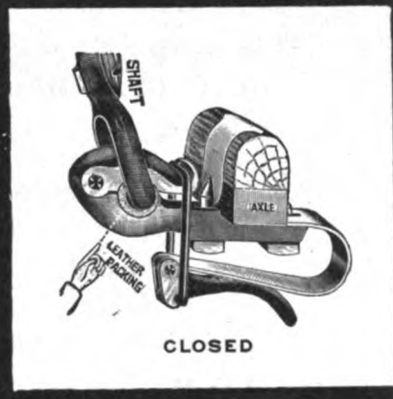
Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1½ in. in section.

C. C. BRADLEY & SON, Syracuse, N. Y.



CLOSED

JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

MILLER BROTHERS

Builders of

CARRIAGES

IN THE WHITE

AND

Automobile Bodies

AMESBURY, MASS.

THE OHIO SEAT CO.

Manufactures PANEL SEATS — **STICK SEATS of every description.**

Also **Canopy Frames, Cushion Frames and Buggy High Backs.** Up-to-date Equipment. Write for Quotations.

1964-1966 CENTRAL AVE., CINCINNATI, O.

H. K. PORTER
EVERETT, MASS., U.S.A.
BOLT CLIPPERS

WM. WIESE
With Hardt, Von Bernuth & Co.
Since 1883.

WM. WIESE & CO.

ALBERT MAERTENS
With Hardt, Von Bernuth & Co.
Since 1894.

Formerly Carriage Goods Department of HARDT, VON BERNUTH & CO.

Carriage and Automobile Linings and Livery Cloths

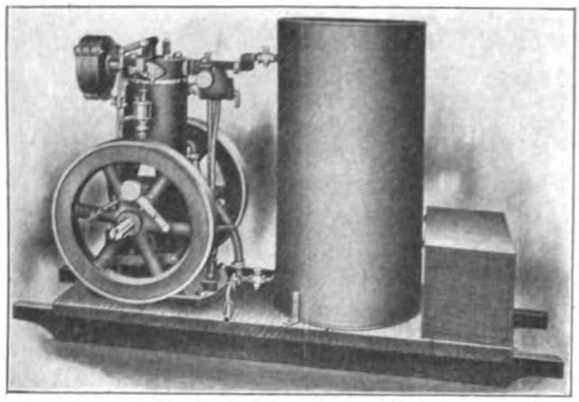
Sole Agents in the United States for
WULFING'S CARRIAGE CLOTH AND EL DE BARAN GOATSKIN.

66-68 Greene St., New York

Please mention "The Hub" when you write.

Digitized by Google

"THE STRELINGER"



Let This Motor Run Your Shop—Only One Cent an Hour per H. P.

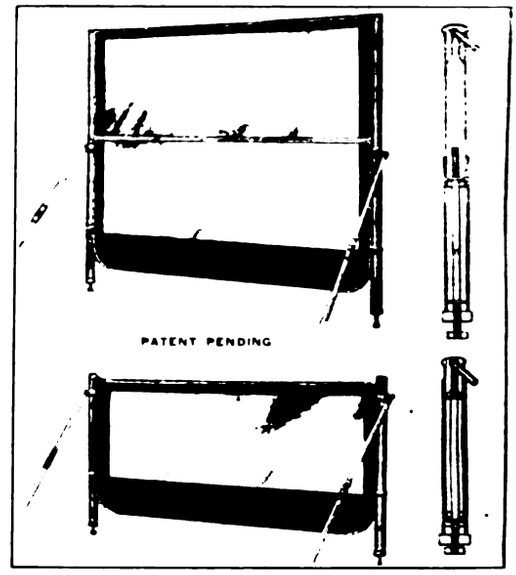
You start it in the morning and it will run 'till night without any attention. Stop and start at your pleasure. Your power is always ready. Strong and steady. This motor will be a source of comfort and satisfaction to you. Send for catalog, and learn more about our STRELINGER ENGINES. One to fifty horse-power.

THE STRELINGER MARINE ENGINE CO.

Dept. Hub, 46 Congress St. E., Detroit, Mich.

TELESCOPE WIND SHIELDS

WILL NOT RATTLE



This Wind Shield embodies all the good qualities, eliminates all the defects, embraces all the advantages possible in a wind, dust or rain protector—all we claim, and the proof is apparent. Made by

Bertram & Lamoreaux

72 East Fort Street **DETROIT, MICHIGAN**

Journal for the Carriage and Automobile Trade

The Hub

Published Monthly at Two Dollars per Year

Kansas City's Most Popular Hotel



THE COATES HOUSE

Surface street cars from Union Depot direct to hotel.

Headquarters for Western Retail Implement Dealers' Association, Southwestern Lumberdealers' Association, Hereford Breeders' Association, Visiting Stockmen.

MODERATE RATES

Inter-State Hotel Co., Pr.

Also Lexington Hotel, Chicago

CARRIAGE FACTORY

Proposition of a Lifetime!

To settle an estate, one of the finest carriage plants in the country can be purchased at advantageous prices and liberal terms. Located in heart of a very substantial Western city. Good will second to none on heavy and light carriages and custom automobile body work.

This is a **going concern** and **will continue to be operated,** but as the principals are women this **rare opportunity arises.** Factory about 90 x 113 feet, five stories and full sized basement. Brick and stone construction. Nothing finer of its kind in United States, and complete in every department. Plant, machinery, merchandise and good will; or will sell machinery, merchandise, good will, and lease the factory on favorable rental. Greatest bargain ever offered to the carriage public. In operation over fifty years, and will continue whether sold or not. In great manufacturing city of about 50.000 population.

For price sand terms, address

CARRIAGE OPPORTUNITY,

Care The Hub, 24 Murray St., New York City.

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

C. T. RAYNOLDS & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

Bimel-Ashcroft Manufacturing Company

Main Office, POPLAR BLUFF, MO.

Factories:
POPLAR BLUFF, MO.
MOREHOUSE, MO.
DERMOTT, ARK.
LOUISVILLE, MISS.

Foreign Correspondence Solicited.

SPOKES

OUR GROWTH

1902—1,310,241 Spokes

1903—3,240,185 Spokes

1904—5,485,748 Spokes

1905—7,845,653 Spokes

1906—7,927,759 Spokes

1907—7,748,839 Spokes

Our New Plant Increases Our Capacity to 12,000,000 Spokes

The ZWICK & GREENWALD WHEEL CO.

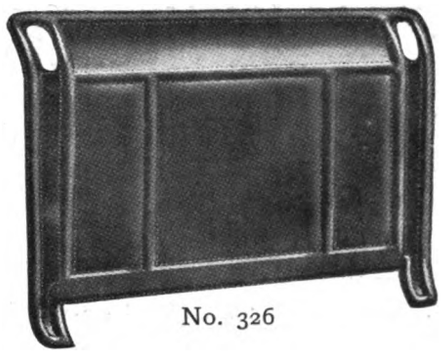
Dayton, Ohio

MAKERS OF

HIGH GRADE VEHICLE WHEELS
SARVEN PATENT COMPRESSED BAND HUB
AND STEEL SHELL BAND WHEELS

WE MAKE A SPECIALTY OF TIRING WHEELS **WRITE FOR PRICES**

Digitized by Google



No. 326

WING DASHES

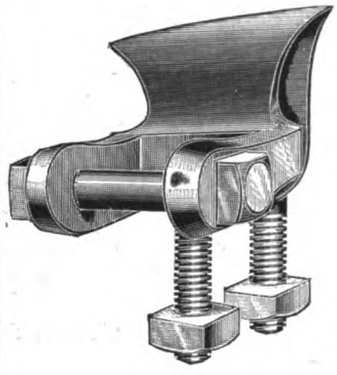
Will be in greater demand in 1908 than ever. Be with the leaders by showing them in your new catalogue.

McKinnon Dash Company

Cincinnati, Ohio
Troy, Ohio

Buffalo, N. Y.

St. Catharines
Ontario



Skewed Shaft Couplings

FOR

High Arched Axles

Furnished in Rights and Lefts for Any Height of Arch.

Bolts, Nuts, Washers, Carriage Hardware and Special Forgings

1908 Catalog "H" on application.

COLUMBUS BOLT WORKS, Columbus, O.



Kokomo Solid Rubber Tires

¶ In rubber substance the Kokomo Solid Rubber Vehicle Tire is truly **SOLID.**

¶ Solid with the pure stock that has made them an exception to the ordinary tires of commerce.

¶ In Kokomo quality there is an established standard that is recognized as the highest ideal of tire construction. The Kokomo is a standard tire in every respect.

¶ Kokomo Tires always score in the running, and the longer the test the more convincing the results.

Kokomo Rubber Company

Kokomo, Indiana, U. S. A.

Digitized by Google

The Hub



TRADE NEWS PUBLISHING CO
24-26 MURRAY ST., NEW YORK

Vol. L., No. 5. AUGUST, 19(

Digitized by Google

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

C. A. WILLEY COMPANY

Color Grinders

AND MANUFACTURERS OF

SPECIALTIES IN CARRIAGE and CAR PAINTS, COLORS, Etc.

WILLEY'S SUPERFINE SPECIALTIES C CO&CH R COLORS
TRADE MARK.

92d St. Cars at Hunter's Point Ferry Pass our Factory.

Hunter's Point, New York City

CALL AND SEE US WHEN IN NEW YORK.



CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

HEAR YE!
HEAR YE!
HEAR YE!

All ye who labor in the Finishing Rooms of the Carriage and Automobile Industries! The best wearing and most beautiful and lasting finish is obtained by the use of

HARLAND'S ENGLISH VARNISH



The merits of Harland's Varnishes are backed by over a century of progress, and it is the unsurpassed quality of this varnish which has not only given the makers a universally pre-eminent position, but has also made it the standard by which all others are compared.

WM. HARLAND & SON
168 CENTER ST.
Factories: Merton, London S. W., England. NEW YORK

WING RUBBER CARRIAGE TIRES



are made from tough, durable, lively New Rubber. QUALITY is the first consideration. Our "Wing" Tire will outwear several ordinary rubber tires. The wings (see cut) keep water, sand and grit from working between the channel and the tire, to wear out the tire from underneath. Write for particulars.

GOODYEAR AKRON, OHIO TRADE MARK.

The Goodyear Tire & Rubber Co.
Carriage Tire Dept.
Akron, Ohio

BRANCHES: Boston, New York, Buffalo, Chicago, Cincinnati, Detroit, St. Louis, Denver, Los Angeles, San Francisco.

81 Years' Experience in Every Can

E.S. 1827 & CO.

Edward Smith & Co.

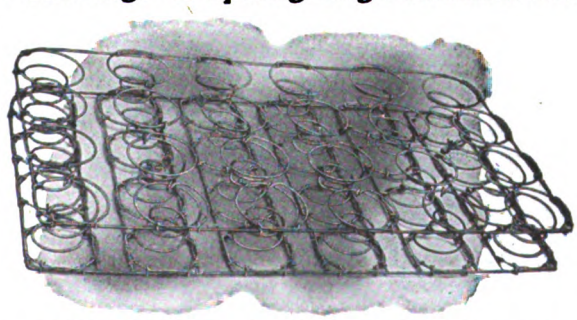
Rough Stuff and Colors

The highest quality made

New York
45 BROADWAY

Chicago
3532 SOUTH MORGAN ST.

Our Carriage or Spring Edge Cushion Frame



Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.

NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

TRANSFER DECORATIONS

Save Time, Permit of More Elaborate Display and Facilitate Production.

Wise Wagon Builders Know the Value of the "Decalcomanie" Both for Lettering and Ornamentation.

Scrolls, Figures, Flowers, Letters, Animals, Stripings, Numerals, Corners, Special Name Plates of All Descriptions, Buggy Ornaments in Sets.

No shop is complete without our catalog. Send for one.

Palm, Fechteler & Co.,

NEW YORK: 67 5th Ave. CHICAGO: 43-45 La Salle St.
MONTREAL, E. LIVERPOOL, O.

Please mention "The Hub" when you write.

Digitized by Google

JOHN W. MASURY & SON

MANUFACTURERS OF

Superfine Coach Colors
:: :: and Varnishes :: ::

NEW YORK and CHICAGO

WHITE'S BRAZING SLEEVES

[redacted] MANUFACTURED BY [redacted]

H. F. WHITE, 111 E. Pearl St., Cincinnati, O.

"Mighty to Wear"

Beckwith-Chandler Company

Manufacturers of High-Grade

COACH AND RAILWAY VARNISHES

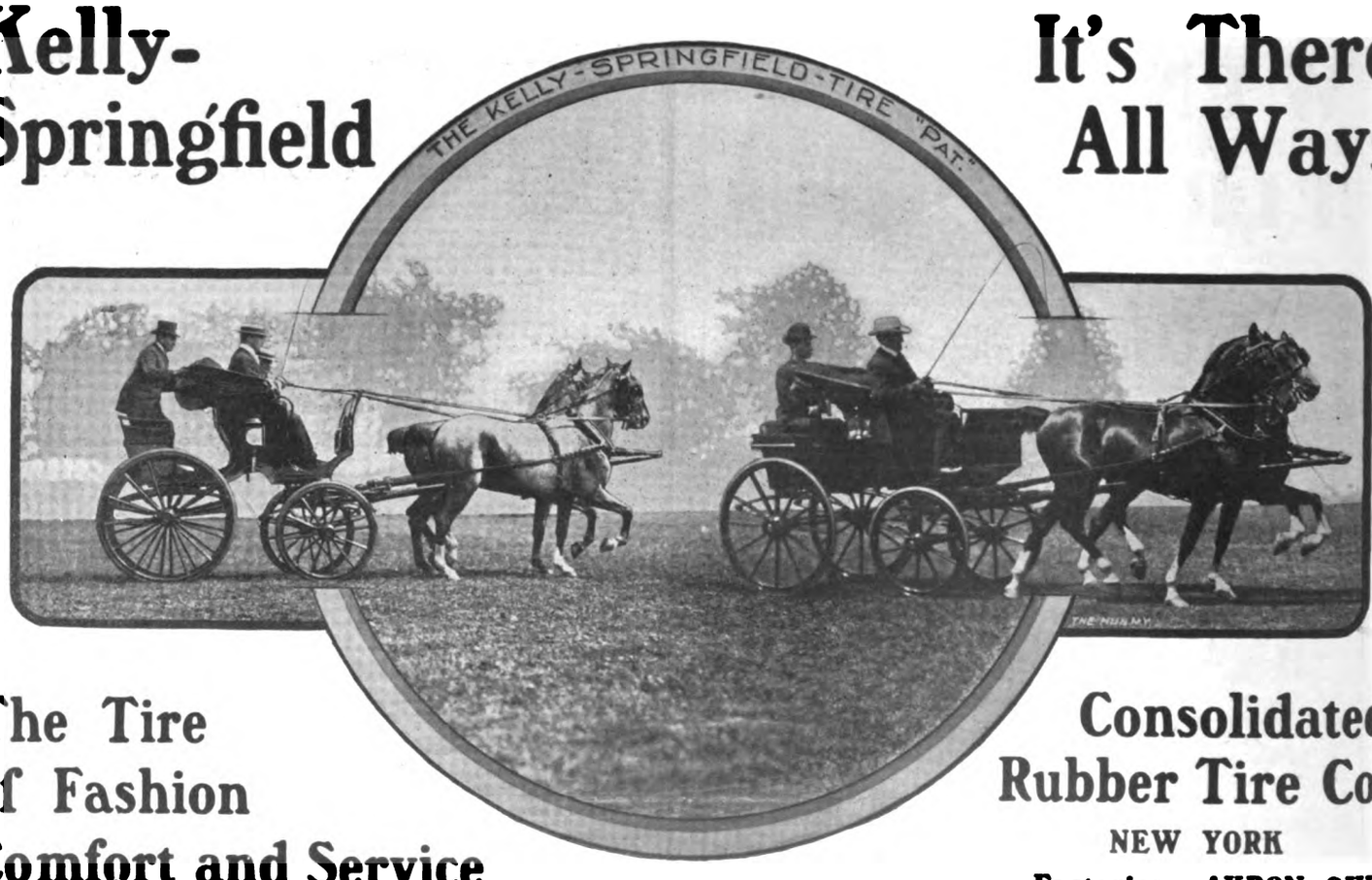
NEWARK, N. J. 201 EMMETT STREET

NEW YORK 320 FIFTH AVENUE

"Lasting Satisfaction"

Kelly-Springfield

It's There All Ways



The Tire of Fashion Comfort and Service

Consolidated Rubber Tire Co.

NEW YORK

Factories: AKRON, OHIO

Please mention "The Hub" when you write.

Digitized by Google

Vehicle Door Hinges

of Forged Steel, Malleable Iron and Wrought Brass. All styles, sizes and kinds, curved and straight.

Good hinges help much to keep the door in alignment. People climb in on the door and the hinges must be strong, especially at the bottom where the greatest strain comes. For this purpose we have Drop-Forged Steel Hinges. A malleable hinge will do for the top if thus reinforced.

If a Brass Hinge is desired, there is nothing stronger in that metal than our Wrought Brass Hinge.

We also make hinges of special shape and design from Bronze Composition metal, or Malleable Iron.

Tell us your needs and we will gladly send samples and quotations.

The English & Mersick Co.

New Haven, Conn.

Carriage Mechanics

Desiring to improve their present Condition should attend the

TECHNICAL SCHOOL

FOR

Carriage Draftsmen and Mechanics

SUPPORTED BY THE

Carriage Builders' National Ass'n.

The object of the School is to teach men to design vehicles and make working drawings, and to otherwise facilitate their work in the shop. Only those men employed in carriage or automobile building or their accessory trades are admitted to its privileges.

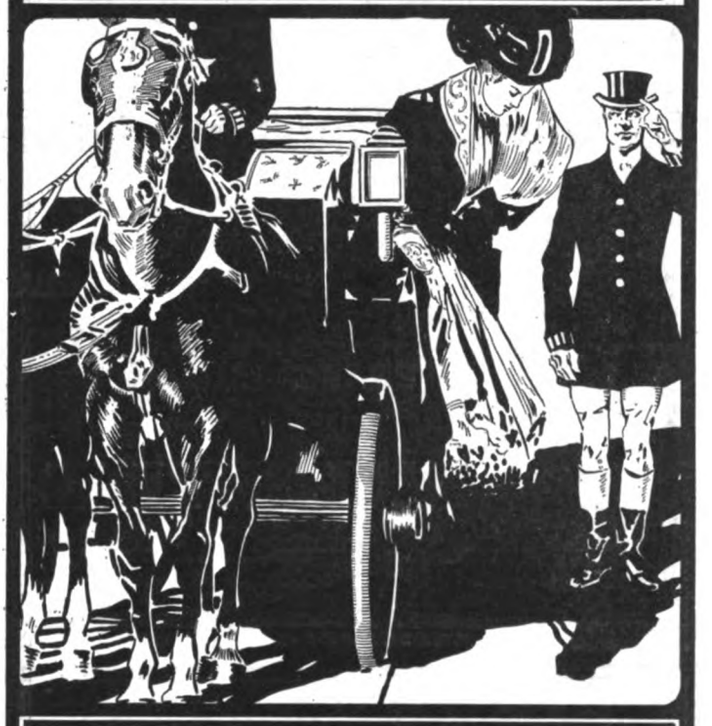
The classes are conducted in three divisions, viz.: Corresponding, Day, and Evening. The former is open during the entire year, while the day and evening classes are in session only from October 1st to April 1st.

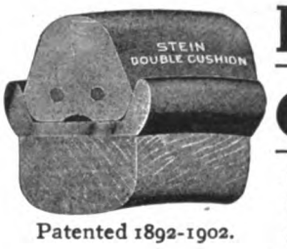
The tuition is moderate.

For prospectus and full particulars, write to the instructor,

ANDREW F. JOHNSON,
18 West Forty-fourth St.,
NEW YORK CITY.

STEIN DOUBLE CUSHION TIRE





Patented 1892-1902.

DOUBLE CUSHION

is no mere name or fancy, but an established and recognized fact in connection with the

STEIN DOUBLE CUSHION TIRE

Seeing, they say, is believing, but to appreciate the double cushion reality existent in our tires—ride over them. What was previously an idea then becomes an establshed fact.

The Stein Double Cushion Tire will be a big talking point in your 1908 line. Be wise and get next to our proposition.

The most serviceable rubber tire on earth.



STEIN DOUBLE CUSHION TIRE CO.
Akron Ohio

Digitized by Google

Satisfactory Varnish

Is a compound that requires years to perfect. It is never a happy thought, or a lucky strike.

Lawson Varnishes

Have the benefit of the knowledge acquired during three-quarters of a century. You are not asked to experiment with an experiment.

Lawson Finishing Gear (for finishing running parts)

Possesses the merit of drying out quickly with a full, handsome lustre that lasts a long time in service.

THE GUARANTEE IS:

TRADE VALENTINES VARNISH MARK

VALENTINE & COMPANY

NEW YORK CHICAGO BOSTON PARIS AMSTERDAM TORONTO

HIGH CLASS ENGLISH VARNISHES

Nobles & Hoare

Cornwall Road, Stamford Street

LONDON

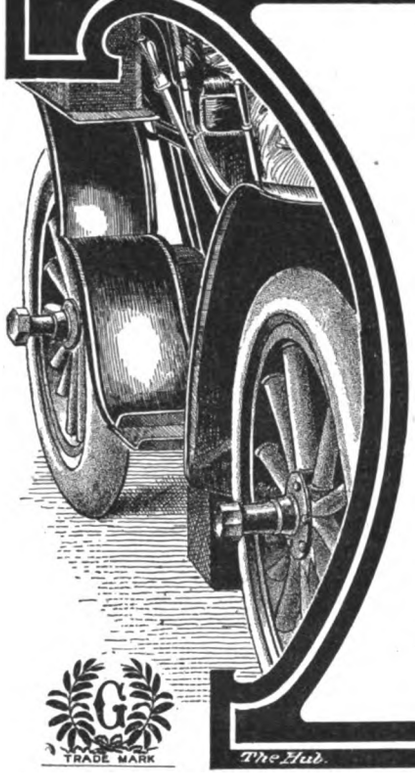
TRADE NOBLES & HOARE NH LONDON MARK

Sole Agents in United States **POMEROY & FISCHER** New York

28 and 30 Frankfort St. (P. O. Box 1224)

Digitized by Google

GOODRICH TIRES



To Ride On

GOODRICH RUBBER

Is an Inexpensive Blessing

Goodrich Solids for the horse-drawn pleasure vehicle.

Goodrich Pneumatics for the motor car.

THE B. F. GOODRICH COMPANY
Akron, Ohio

Chicago	St. Louis	Cleveland
Philadelphia	Denver	Paris
Boston	Detroit	London

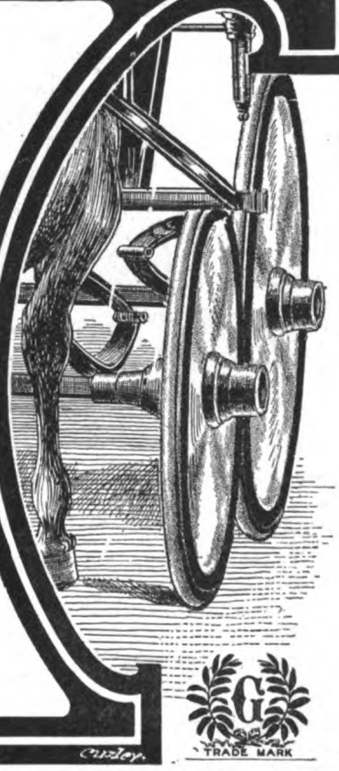
Factories: AKRON, OHIO.

Our products are also handled in

New York and Buffalo by

The B. F. Goodrich Company of New York.

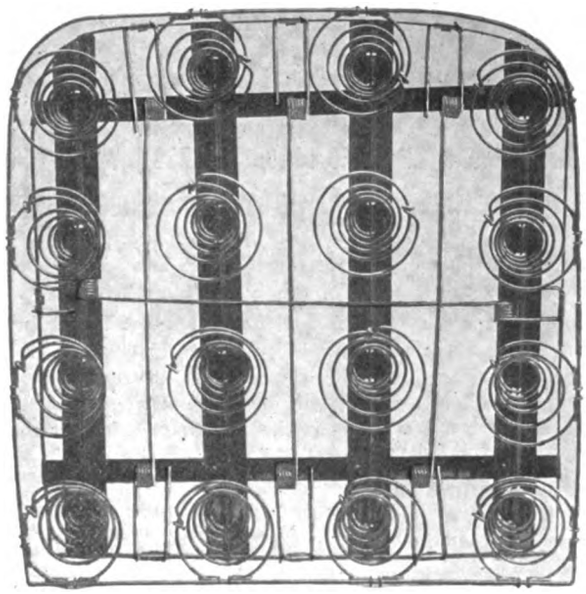
and in San Francisco, Los Angeles, Seattle



TRADE MARK

TRADE MARK

ROYAL ARCH AUXILIARY SPRINGS



Soft Face Construction. Patented.

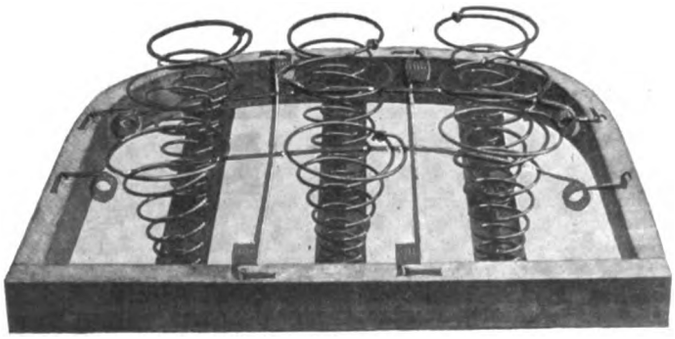
Auxiliary Spring & Ventilating Button Co.

DETROIT, MICH.

ROYAL ARCH AUXILIARY SPRINGS prevent the complete depression of the coiled springs, relieve the coils of the severe shocks, and greatly lengthen the life of the cushion. A cushion with Royal Arch Springs will never sag, and

FORTIFIES THE RIDER AGAINST THAT SUDDEN UNEXPECTED JAR

Will cost no more than the common construction. Why? Write us.



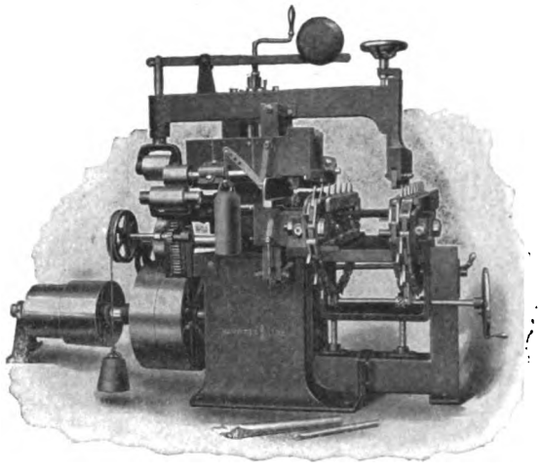
Wood Frame Construction. Patented.

Please mention "The Hub" when you write.

Digitized by Google

HAMILTON-OHIO-LINE WOOD WORKING TOOLS

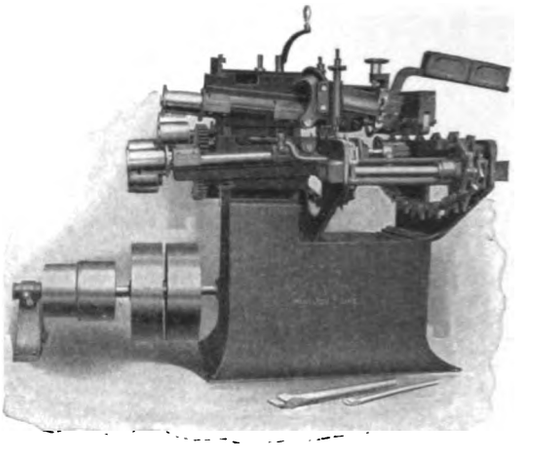
For Automobile Body and Wheel Work, Carriage and Wagon, Hub, Spoke, Rim and Wheel Factories



Hamilton Spoke Tenoning and Mitering Machine No. 398



Hamilton Scroll Saw No. 331.



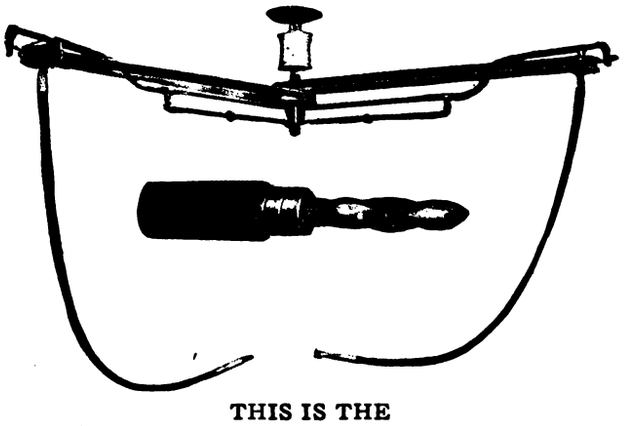
Hamilton Automatic Spoke Throating Machine No. 399

Disk Sanders, Belt Sanders, Spoke Sanders, Wheel Sanders, Gear Shapers, Scroll Eyeing Machines, Gear Rounders, Spring-Bar Boring Machines, Seat-Back Benders, Rim Planers, Rim Rounders, Rim Borers, Rim Cut-Off Machines, Wheel Boring & Screw Driving Machines, Spoke Lathes, Spoke Cut-Off Saws, Spoke Tenoning and Mitering Machines, Spoke Throaters, Spoke Facers, Wheel Facers, Wheel Tenoners, Hub Lathes, Hub Mortisers, Hub Borers, Wheel Boxers, Wheel Presses, Tire Truers, Tire Bolters, Spoke Cut-off Machines, Band Saws, Rip and Cross-cut Saws, Planers, Matchers, Moulders, Shapers, Boring Machines, Universal Wood Workers, etc., etc., etc.

THE BENTEL & MARGEDANT CO., Hamilton, Ohio, U. S. A.

There Are Others

BUT NONE SO GOOD



THIS IS THE

RADIAL BORING MACHINE

THAT GIVES SATISFACTION.

SPECIAL PATENTED PLUG BIT AND OTHER ATTACHMENTS IF DESIRED.

STEEL LINK CORE, STRONG AND DURABLE

PRICES:

Double Arm Machine, with Chuck.....$85.00
Single Arm Machine, with Chuck..... 65.00
A Discount of 15 per cent. when cash accompanies order

The Flexible Shaft & Tool Co.

BELLEFONTAINE, OHIO.

INDEPENDENT OF ALL COMBINATIONS

The Eagle White Lead Company's

"EAGLE" BRAND OF "OLD DUTCH PROCESS" WHITE LEAD

ALSO "EAGLE" RED LEAD, LITHARGE AND ORANGE MINERAL

Our **Special Coach and Carriage White Lead** is the best white lead on the market for this class of work.

We claim for our **"Eagle" Red Lead** that, for Durability, Color, Texture, Covering and Spreading Properties, it is not excelled by any red lead in the world. It requires more pure linseed oil to the hundred pounds, and when properly mixed it will not settle. It is the best foundation coating for vehicles known.

New York—54 Maiden Lane
H. C. Russell, *Manager*
Philadelphia—1901 Callowhill St.
Baltimore—447 North St.
Geo. O. Shivers, *Manager*
Buffalo—Builders' Exchange
A. S. Goltz, *Manager*
Pittsburg—
Pittsburg Paint Supply Co., *Agts.*
Cleveland—
The Hale & Holmes Co., *Agents*
Chicago—125-127 N. Peoria St.
E. B. Bennett, *Manager*
St. Louis—405a Benoist Bldg.
B. P. Temmeyer, *Manager*
Kansas City—
W. R. McDonald, *Agent*
New Orleans—
Jno. R. Todd & Bro., *Agents*
Dallas—Jack H. Frost,
Agent for State of Texas

Eagle White Lead Co., Cincinnati, Ohio

Digitized by Google

The Hub

Copyright, 1908, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. L. NEW YORK, AUGUST, 1908. No. 5.

THE TRADE NEWS PUBLISHING CO. OF N. Y.

Publishers of THE HUB

J. H. Wright, *President.* G. A. Tanner, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

Jacob H. Klein, *Technical Editor.*

REPRESENTATIVES:

J. Henry Klunk. J. G. Tanner. B. H. Hull.

The Hub is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of Trade News Publishing Co.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

France.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

Germany.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

England.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

Too Much Noise About It.

The reading of a paper by a dealer at the Atlanta convention of the C. B. N. A. put that association on carriage warranty in a wrong light before the dealers in vehicles everywhere. The conclusion was jumped at that the manufacturers were about to withdraw all warranty. No such thought was contemplated. Even now, after the matter has been before the trade for two years, it attracts very little attention, and more is made of the matter than the facts warrant.

Warranty in some form will always exist between manufacturers and dealers, and between dealers and buyers. The basic reason for its maintenance is the wide difference in material used and the impossibility of the most conscientious manufacturer in always knowing the through-and-through quality of the material used. The abuse of warranty does not warrant its abolition. The rank and file of dealers want only what is fair, and they are in the same boat with builders when it comes to protection against unfair buyers. The agitation of the question will do more good than the passage of resolutions. Neither side is ready for action. Much headway towards the righting of the abuse of warranty can be made and is being made through the friendly and moderate agitation of the subject.

Not all users of vehicles are in the habit of taking advantage of warranty. It is the exception. The bulk of buyers are conscientious, and ask for nothing unjust. What may be possible of accomplishment is a uniform guaranty, but even this presents practical difficulties.

If dealers are careful from whom they buy the warranty trouble will largely settle itself. The guaranteeing of inferior goods always makes trouble. Manufacturers, or rather some manufacturers, are primarily at fault for the abuses complained of.

Predatory Journalism.

"Yankee impudence," "carping critic," and "brazen cheek" are examples of the weighty argument made by a certain London trade journal, which tacitly admits that it has purloined the expensive drawings and descriptive articles of The Hub without a word of credit, and virtually sold them to its patrons as its own original production.

"Confession is good for the soul," and may even mollify the rigor of punitive justice. But it is quite unusual for a culprit who answers "guilty," to seek to justify himself because of the alleged "brazen cheek" of the prosecuting witness whose house he has looted, or by averring that another thief many years previous had stolen something from him. But our "great and good friend" across the pond not only urges this specious sort of defence, but by reason of an international delinquency pleads that it may freely plunder the columns of American journals, because such peculiarly reprehensible kind of theft "cannot be prevented (to use his own words) without large expense."

Our esteemed competitor—perhaps inadvertently—illustrates how securely such thrifty operations can be carried on by "swiping" without credit a full illustrated page from The Hub in the same recent issue in which it comes back at us with a Dreadnaught projectile loaded with love taps—samples above cited—a column long.

Replying to the street vernacular repartee, "you're another," The Hub enters a general denial, never having, under the present management, at least, reprinted an essential paragraph without giving due credit. Two of our successive predecessors have departed this life, and it would be questionable propriety to assail their memories. At any rate we object to being sacerdotal goats and driven into the wilderness with any possible sins of plagiarism they may have committed.

We may feel a tinge of pride in having our journalistic wares appropriated by a publication of as good standing as our transatlantic contemporary is reputed to have, and if it is afflicted with a type of kleptomaniac weakness we commend its good judgment in making The Hub its most available victim. But there are others, and our English cousin knows a good and original thing when he sees it anywhere. No doubt if Ezekiel were living in these days of coaches, motor cars, etc., and should employ as skilled artists as does this "Yankee" journal, to describe his full assortment of wheels, our thrifty trade competitor would scissor 'em all out and then perhaps

Digitized by Google

strike Uncle 'Zeke for full advertising rates for publishing them.

The drawings and articles which this London carriage trade journal has appropriated from The Hub, and palmed them off as its own productions, are as follows. The dates are those on which our contemporary published them:

June, 1907—"Making Motor Car Bucket Seats."

July, 1907—"Working Drawing of Limousine Body," with enclosed front seat.

July, 1907—"Fitting Cape Hood to Single Motor Body."

September, 1907—"Working Drawing of Motor Landaulette Body."

September, 1907—"Fitting Cape Head to Light Motor Car."

September, 1907—"Fitting Lever Brake to Drop Landau."

September, 1907—"Forging Body Plate for Victoria Body."

November, 1907—"The Designing of Under Carriages, and the Stresses Acting On Them."

November, 1907—"Fitting Up and Developing a Landau Head."

December, 1907—"Fitting Lever Brake to Angular Phaeton."

January, 1908—"Motor Body Making."

January, 1908—"Hanging Doors."

March, 1908—"Hanging Shafts to Two-Wheeled Carriages."

April, 1908—"Metal Paneling for Motor Car Body Seats."

June, 1908—"Working Drawing of D Fronted Limousine Motor Body, with Victoria and Park Phaeton Bottom Quarters."

Here is a list of fifteen drawings and articles purloined; out of these only one has been acknowledged.

Traps.

The sales in the larger repositories both East and West show a growing preference, especially by ladies, for city use of transformable vehicles and traps. For a long time the trap was not favorably regarded by the fashionable element. Even now with some it is barely tolerated, and yet there is no reason why it should be regarded with disfavor. Since women have taken to riding, the trap has been coming in favor as a convenient, light and attractive affair on wheels. Builders have done much with the earlier traps to make for them a place in trade of cities. The art of the salesman has been brought to bear, and we now find these light and inexpensive vehicles in the Western and Southern States, where a few years ago they were practically unknown.

A leading builder, who speaks from experience, says the trap is destined to grow in popularity at the expense of the buggy.

Improving Signs in the Southland.

There is no sound reason why the improving carriage building outlook in the Southern States should not be genuine and progressive. The Southern builders have established an industry under exceedingly trying surroundings. They have been largely limited to buggy construction, as to the bulk of their business, and they have had freight rates to meet which were not in their favor. Just the right sort of skilled labor has not always been at hand. Competition from north of the Ohio has been a force with which they have had to reckon. Unfavorable crop conditions in streaks have discouraged some builders, but the development of the past few months, while not materially improving trade, have been favorable rather than otherwise. The iron and steel industries are booming, coal mining is active, cotton growing and all the lesser industries whose mother is the cotton boll are thriving. All broad minded builders north of the Ohio will welcome the return of prosperous conditions to their deserving and enterprising brothers of the South.

The Accessory Men.

When the accessory manufacturers unpack their boxes at Chicago and display their interesting wares they will show the finest set-out of carriage entrails and parts ever shown at an exhibition of parts. One reason for this increasing interest in the "parts" show is that much business is done, the volume increasing a little each year. In many instances when orders are not actually placed the opening is made and business follows.

This year there will be very complete displays of carriage hardware, and, as noted a month or two ago, much of this hardware will show an improvement in finish. The display of wheels, hubs, gears and all wood parts will be even more complete. There is one reason for this, and that is—Chicago.

The carriage industry is moving northwesterly. At least small shops and little carriage factories where carriages are put together are increasing. The accessory men have long noses and can smell trade possibilities afar off.

Rubber Tires.

The tire manufacturers appear to be in glee over things in general. The percentage of tired vehicles they tell us is increasing, and they know. Between ordinary vehicle demand, the growth of the commercial truck industry and the wonderful development of the automobile industry they are having full hands and good bank accounts. While rubber soars, they are having better margins, fractionally better at least. Trade near and far is good. Their order books fill up as fast as they check off shipments.

This is an age when comfort is at a premium. Rubber tires mean comfort. The commercial truck makers cannot get tires too good, and they are willing to put down the price for what they want. The automobile builders ask no questions as to prices, but they want quality. The rubber tire makers have earned the prosperity they are enjoying, and their industry is one which must grow and prosper with increasing desire for luxury, to say nothing of necessity.

About Time.

The iron and steel industry has at last turned a corner, and every week brings news of decreasing idle capacity. The volume of freight traffic is decreasing each week in number of idle cars. The railway managers have decided to not lower wages and to not increase freights—for the present. The locomotive builders have increased from one-third capacity to two-thirds. The car builders have not yet been favored with more business. The railroad bridge builders are still on a long vacation. This summarizes the situation in a few words.

After about ten months of doing nothing in the way of repairs the country is getting decidedly "shabby." The country is wearing its old clothes and its shoes badly need at least half-soling. Economy has gone to dangerous limits. The first sign given a few days ago was in the machinery markets. Some half score of big machinery concerns are now figuring on big machinery, electrical and tool orders for supplies to be furnished this fall. It's about time.

Despite the overhanging dark clouds, quite an amount of remodeling of carriage factories has been done since last autumn. Most of these remodeled plants are of moderate size. In some instances additional capital has been found, in other cases new men have appeared. The sign is a good one.

Digitized by Google

Illustrated Carriage Section, August, 1908



RETAIL MILK WAGON.



WHOLESALE MILK WAGON.

Typical New York Commercial Vehicles in the Work Horse Parade Recently Held in that City

Digitized by Google



RETAIL DRY GOODS WAGON.



TWO-HORSE FURNITURE TRUCK.

Typical New York Commercial Vehicles in the Work Horse Parade Recently Held in that City

Digitized by Google



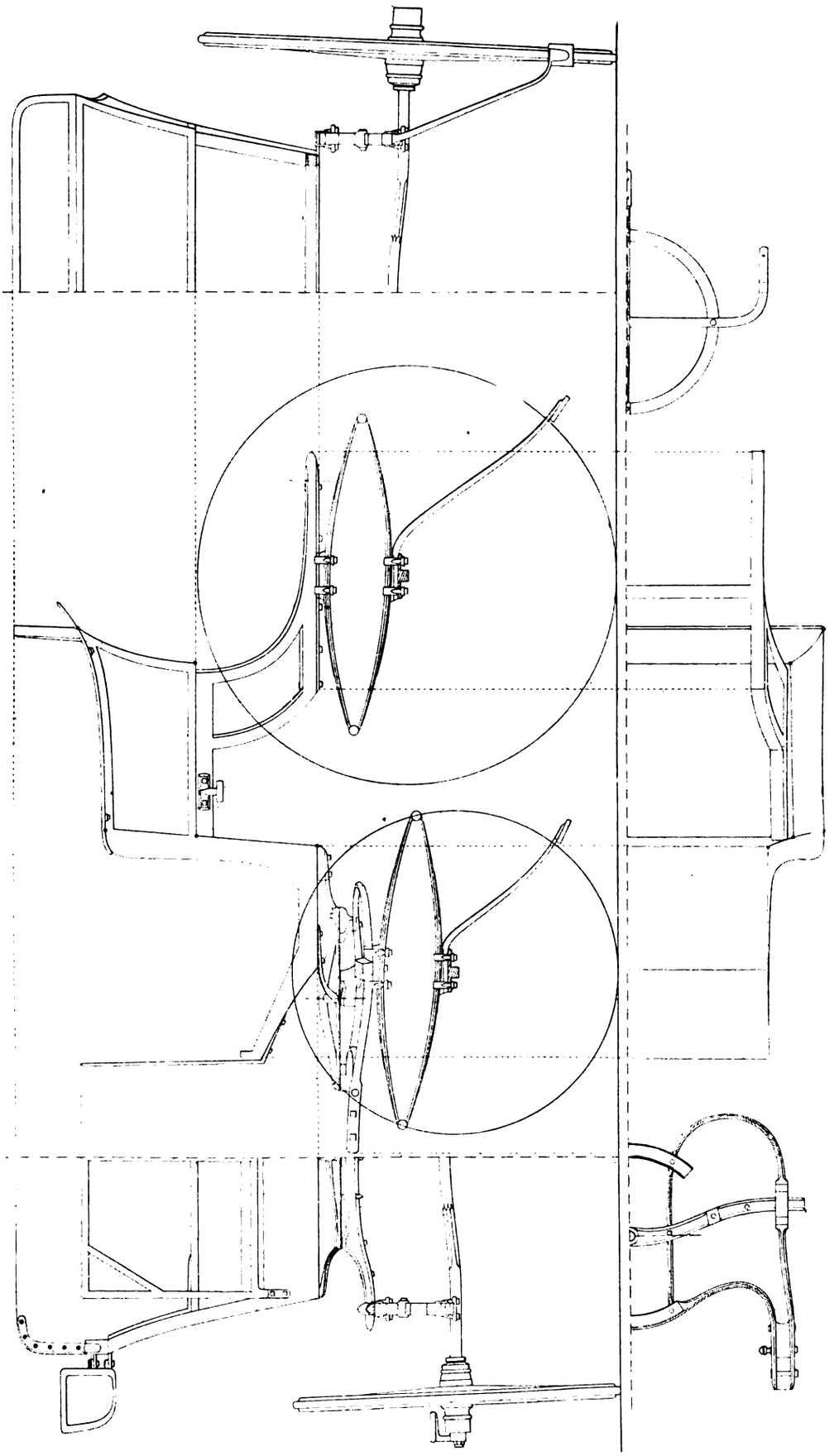
WATER DELIVERY WAGON.



THREE-HORSE MERCHANDISE TRUCK

Typical New York Commercial Vehicles in the Work Horse Parade Recently Held in that City

Digitized by Google



Working Draft of Park Phaeton.

From Le Guide du Carrossier.

Scale, three-quarters inch to the foot.

Digitized by Google

Wood-working and Smithing

FORESTRY IS NOT A NEW THING.

Many people in this country think that forestry had never been tried until the government began to practice it upon the national forests. Yet forestry is practiced by every civilized country in the world, except China and Turkey. It gets results which can be got in no other way, and which are necessary to the general welfare. It was discussed two thousand years ago, and it has been studied and applied with increasing thoroughness ever since.

The principles of forestry are everywhere the same. They rest on natural laws, which are at work everywhere and all the time. It is simply a question of how best to apply these laws to fit the local needs and conditions. No matter how widely countries may differ in size, climate, population, industry, or government, provided only they have forests, all of them must come to forestry some time as a matter of necessity.

The more advanced and progressive countries arrive first and go farthest in forestry, as they do in other things. Indeed, we might almost take forestry as a yardstick with which to measure the height of civilization. On the one hand, the nations which follow forestry most widely and systematically would be found to be the most enlightened nations. On the other hand, when we applied our yardstick to such countries as are without forestry, we could say with a good deal of assurance, by this test alone, "Here is a backward nation."

A singular and suggestive exception is England, which, though provided with mountain and heath lands capable of producing a large part of the wood for home consumption, has, with strange indifference, been leading all nations in volume of wood imports and depending mainly upon foreign sources for her supplies. England has hitherto been able to count with certainty upon outside aid from such near neighbors as Norway and Sweden. This policy has seemed satisfactory to the people in spite of the examples of a more provident policy afforded by rival nations almost at her door. The geographical and economic positions of the country have permitted the government, for the time at least, to ignore measures found necessary for the public welfare in other countries of the same rank.

The countries of Europe and Asia, taken together, have passed through all the stages of forest history and applied all the known principles of forestry. They are rich in forest experience. The lessons of forestry were brought home to them by hard knocks. Their forest systems were built up gradually as the result of hardship. They did not first spin fine theories and then apply those theories by main force. On the contrary, they began by facing disagreeable facts. Every step of the way toward wise forest use, the world over, has been made at the sharp spur of want, suffering, or loss. As a result, the science of forestry is one of the most practical and most directly useful of all the sciences. It is a serious work, undertaken as a measure of relief, and continued as a safeguard against future calamity.

Roughly, these countries which to-day manage their forests on sound principles have passed through four stages of forest experience. At first the forests were so abundant as to be in the way, and so they were either neglected or destroyed. Next, as settlements grew and the borders of the forest receded farther and farther from the places where wood was needed and used, the question of local wood supplies had to be faced, and the forest was spared or even protected. Third, the increasing need of wood, together with better knowledge of the forest and its growth, led to the recognition of the forest as a crop, like agricultural crops, which must be harvested and which should therefore be made to grow again. In this stage of silviculture, or the management of the forest so as to encourage its continued best growth, was born. Finally, as natural and industrial progress led to measures for the general welfare, including a wiser and less wasteful use of natural resources, the forest was safeguarded and controlled so as to yield a constant maximum product year after year and from one generation to another. Systematic forestry, therefore, applied by the nation for the benefit of the people and practiced increasingly by farsighted private citizens, comes when the last lesson in the school of forest experience is mastered.

The United States, then, in attacking the problem of how best to use its great forest resources, is not in the position of a pioneer in the field. It has the experience of all other countries to go upon. There is no need for years of experiment with untried theories. The forest principles which hundreds of years of actual practice have proved right are at its command. The only question is, how should these be modified or extended to best meet American conditions. In the management of the national forests the government is not working in the dark. Nor is it slavishly copying European countries. It is putting into practice, in America, and for Amercans, principles tried and found correct, which will insure to all the people alike the fullest and best use of all forest resources.

IMPROVED SHAFT STEP.

We have recently been importuned to set forth some wholesome way of making a shaft step that will not break with ordinary usage. One comes from Philadelphia, and is about as follows: "We send you outline of how we make our steps at present. They will not stay with the shafts more than a month or two. Please have your smith editor suggest an improvement; we are confident he will build up our hopes of supplying a step that will not leave the wagon on easy pretext.

"L. N., Cleveland, O."

Fig. 1 sets forth the sketch sent us by L. N. A, section of the plate on top of shaft bar; B and C, plate and rounded sec-

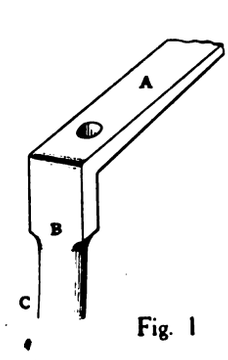


Fig. 1

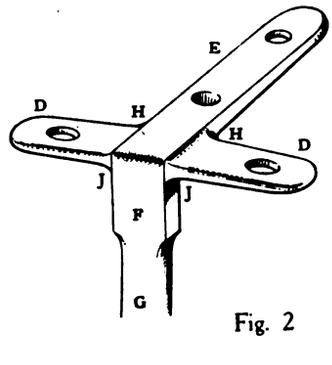


Fig. 2

tions of the step shank. It is to be inferred that the bolt which passes through plate A also passes through the shaft and bar at the mortise and tenon of the same, perhaps one of the worst features in practical shaft making. There is not bearing enough on the shaft bar to lend any stability. A knock from the front loosens the bolts a little; another from the back opens up the rattle box, next in order one bolt goes, then the other and some junk man by the wayside increases his stock by a step. Next there is not enough to stand any shock. Using the step by a heavy person causes it to bend. We straighten it cold; once or twice it passes O. K.; the next time we go just a mite too far, and when we step on it down we go. The method of bolting

Digitized by Google

permits of the loosening of the shaft bar joint and thus helps to fill the cup of unpleasantness.

In Fig. 2 we cover all the weak points and give a good reliable servant; D D represents the shaft plate part of the step, which make full width of the shaft and thick enough to suit width. Swage to a flat half oval if necessary. E is that part of the plate resting on the shaft bar, which treat the same as with D D. Be careful and leave the corner H H full. Bolt holes are shown, but it will be found that no bolts pass through the mortise and tennon. F is the flat part of the shank, which leave as wide as the top plate and thick enough to form the rounded part of the shank G. Be careful and leave full corners at J J also. Make the shank as long as is necessary and set as far forward and under as is necessary. Make pads ample and cover with serrated rubber as a matter of safety. With this much we assure you safety in the step line.

NEW METHOD OF SECURING FRONT SPRING OF PERCH VEHICLES.

One of our esteemed subscribers writes as follows: Your wrench for back nuts of front saddle clips, as published in your May issue of last year, proved a very desirable tool; nearly all our gear ironers now have one in their kit of tools. Some of our patrons would only accept the present saddle clip front and back. We have a number of patrons, however, who are clamoring for a new method of securing the front spring, something

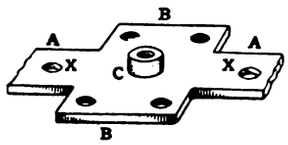


Fig. 1

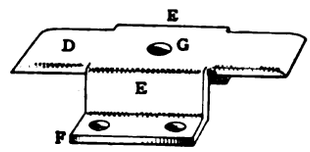


Fig. 2

which can be handled more readily than the saddle clip. We are confident in saying to you, "please give us something as good or better and easier manipulated and you will supply our wants.

Let us hear from you at an early date, and possibly in doing so you will please many other subscribers at the same time.

J., Cincinnati, O.

Our friend J., of Cincinnati, O., is not the only complainant. The matter has been under advisement for some time. The wrench appearing on above mentioned issue was a plain answer to the pending problem, the full answer to which we give in the present chapter. The product will no doubt prove very interesting to many of our patrons.

Fig. 1 presents a section of the head plate, of which A A are the portions resting on the head block; B B are extension

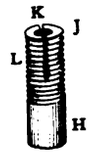


Fig. 3



Fig. 4

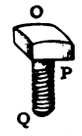


Fig. 5

ears or lugs at the front and back of the head plates, their duties being similar to the solid clip bars of the old method; C is the usual boss or thimble on the upper side of the head plate, which inserts in a counterbore of the head-block, its object being to give a greater bearing to the kingbolt, thus making its existence much greater; X X are holes for screws, by means of which to secure the plate to the head block. The holes in lugs B B are for securing the spring in the new way, for which see Fig. 2. The boss or thimble C is furnished with the usual hole for the passage of the kingbolt.

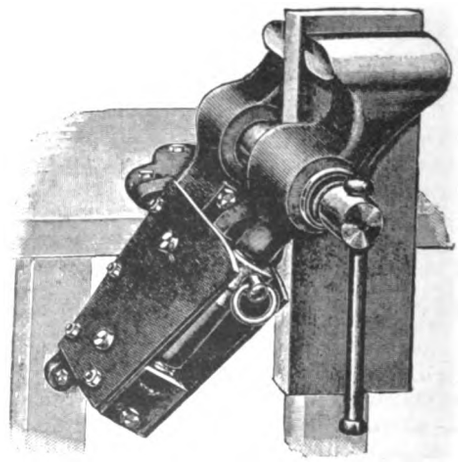
Fig. 2 shows the new method of saddle clips. D, the flat plate setting on the upper surface of the lower main plate with the hole G, for the passage of the kingbolt; E E are the parts which turn down on each side of the head block; F is the part which rests on the lugs or ears B B, Fig. 1. The holes in part F are for securing the same to the lugs B B, Fig. 1, which is done by means of square head machine screws, which are threaded into the holes of Fig 1. Fig. 5 shows square head machine screw without taper. O, head; P, screw part; Q, the point slightly pointed to make entrance easy. For ordinary work these screws may be 5-16 in. diameter; for heavier, ⅜ in. diameter; for lighter work, ¼ in. diameter.

The parts B E, Figs. 1 and 2, may be about three inches wide, B, not less, for ordinary work, than 5-16 in. thick; F, about the same or thicker, as per the weight of springs. E ought to be left short enough to admit of a piece of hard leather packing between B, Fig. 1, and F, Fig. 2, in order to prevent too much friction. The heads of the securing screws are on the upper side, which makes their manipulation much easier than by the old method saddle clip. The width of the vertical strap prevents the probable splitting of the head block, and with the assistance of the two securing screws at the front and the two at the back holds the spring firmly in position and prevents possible swaying.

The riveting of the end of the kingbolt above the nut to prevent its working off is a very unpleasant feature. If there are doubts, ask the men who do repairs or joint springs. We think with Figs. 3 and 4 we get rid of all that trouble. Fig. 3 is upper part of kingbolt; J, section on which nut is fitted. The hole K in the top is drilled and tapped, into which is inserted when all is complete the set or lock screw Fig. 4, M, the head; N, the screw part, which is made tapering. The mark L across the top of Fig. 3 and down its vertical section is a slot made with a hack saw. When the kingbolt nut is adjusted and all right, insert the point of the set screw, Fig. 4, in the hole K, Fig. 3, and screw down. This causes the upper end of the kingbolt to press against the walls of the nut, thereby forming a complete but very simple lock. One dozen of these simple set screws will not cost one-half as much as chipping the burr off the riveted kingbolt. We take it for granted it is understood that all is to be made of Norway iron.

BENCH VISE WITH MERITORIOUS FEATURES.

An English contemporary illustrates in a recent issue a design of vise which should be appreciated by bodymakers and wheelrights. The vise is made to hold a piece of timber in a vertical position, permitting the entire width of the jaw to be in use.



This feature is accomplished through its peculiar construction, being built and adjusted to the work-bench in an oblique position, avoiding interference, as shown by reproduction herewith.

It is also provided with a swivel jaw, moving on a ball and socket joint, to receive tapered work. It is fitted with steel jaws and strongly built for heavy work. The vise is known as the "Universal" and is made by a firm of Leeds, England.

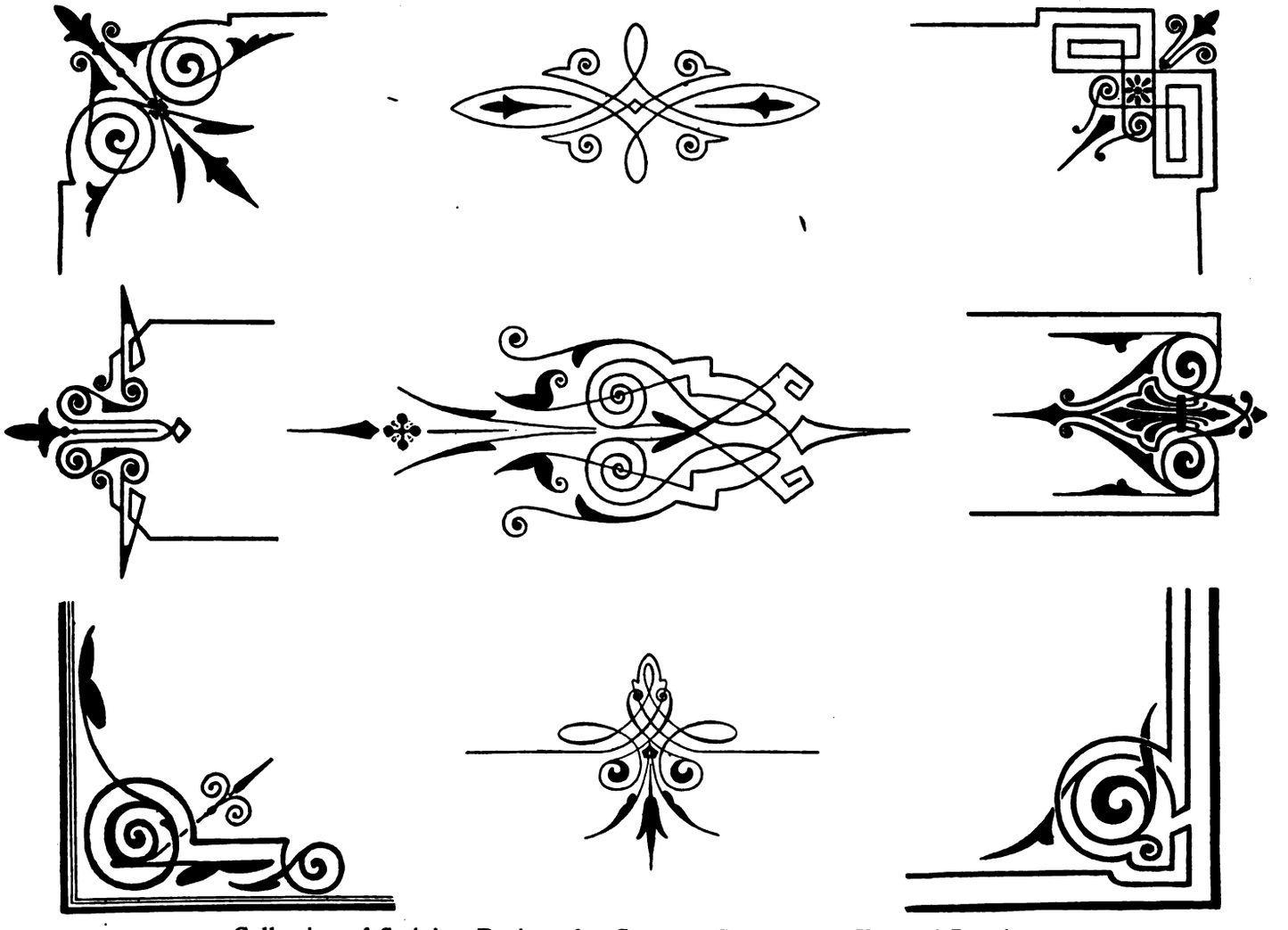
Digitized by Google

PAINTING AND UPHOLSTERING

HARVESTING THE CUTTER CROP—EARLY PREPARATIONS PROFITABLE.

Ere this issue of The Hub is in the hands of its readers the rush and hurry incident to life in the custom paint shop will have passed into the history of 1908 affairs, and the painters will be casting about for enough floating business—the driftwood that annually floats in the wake of the log-jam—to engage their activities until the flush times of another season have been ushered in. While the painting of cutters and sleighs is beyond, or, rather, outside the jurisdiction of probably a large number of Hub readers, there are a great number of readers within the snow belt to whom the painting of the cutter and sleigh outfit comes almost in the nature of manna in the wilderness. It is merely a question of going out and possessing the land. Or, in other words, hustling after the equipment on runners. August, to be sure, is early to get after this class of equipment, but it's the early bird that catches the worm, as a rule. It is not expected that even the ablest trade canvasser will get 50 per cent. of the cutter and sleigh equipment during the month of August and September, but if he should get, say, 25 per cent., it would help immensely to tide over a characteristically dull period. At the later date there is always sure to be a sufficient per cent. of tardy arrivals to keep the painter hustling even with a full 50 per cent. or more of the equipment clothed under a fresh garment of paint and varnish.

It is a good stroke of business, therefore, to get around during August and September and gather up as much of this cutter and sleigh equipment as possible. Some of this work you may have to store for awhile after finishing, but it is easier, on the whole, to secure storage quarter, than to remain idle for a protracted season with the usual expenses systematically piling up. Some of these early orders will doubtless be secured at a discount from the prices exacted under cover of the first snow fall, but the ancient maxim recounts the fact that "a bird in the hand is worth two in the bush," and on this basis the cutter can be painted at a profit cheaper in early autumn, when hands might otherwise be idle, than when the first run of sleighing is calling the runner stock into action. We believe it good business policy to pick up, or make a preference of picking up that class of cutters and sleighs which call for the heaviest painting repairs. This work will furnish more labor per given working and storage space, besides being the more profitable to handle early in the season. Where storage of equipment must be taken into



Collection of Striping Designs for Corners, Centers and Ends of Panels.

Digitized by Google

account it is desirable, from all points of view, to gather in work for which the most money may be obtained.

At the present time, outside of the large towns and cities, not much roughstuff is applied in the repainting of sleighs and cutters. Thorough repainting generally means surfacing upon the old paint foundation with the use of a coat of lead, as a stopper and surface coat. Then any existing fracture, nail holes, etc., are puttied up and in due time reduced to the proper surfaces, after which color, varnish color, striping and the usual varnish coats are applied.

In case the surface is cracked and fissured sandpaper with No. 1½ paper, dust off and apply a coat of lead mixed to dry flat. When this coat is sufficiently dry to work over, thin with turpentine some of the regular putty to a free glazing consistency and with a broad putty knife (a 2½ inch half elastic French scraping knife) plaster the fissure panels over solidly, slicking off in course of the operation all surplus pigment. Reduce this stopper coat when dry by rubbing with a medium fine surfacing stone or brick, as it is called, dipped in raw linseed oil. Permit the surface so rubbed a little longer time to dry than ordinarily allowed, after which the customary processes may be carried forward.

It is important to remember in connection with the surfacing of sleighs and cutters that the surface is far enough below the line of sight to minimize, rather than intensify, errors of workmanship or disfigurements. Hence the finish that would prove unacceptable upon carriage or wagon goes unchallenged upon the sleigh.

The main consideration is plenty of high lustre, rich and effective color effects, and enough fine striping to set off the general appearance of the work. While it is true that profits are moderate in cutter and sleigh work, the business usually comes when the paint shop is figuratively hanging by one suspender.

PREPARATION OF SURFACES FOR REPAINTING.

One of the important steps in repainting vehicles is defined as the preparation of the surface. Particularly should this be emphasized in respect to the running parts, upon which, too often, an inferior, or, at any rate, a cheap class of labor is employed. The body surfaces are more carefully, as a rule, taken in hand and given attention. The running parts should as soon as the vehicle is unhung be closely gone over and cleaned, all fractures reduced and made clean and sound and smooth by going over them with a steel scraper fashioned to fit the contour of the surface, and the entire parts rendered by scraping and sand papering as smooth and fine as possible. This preparatory work reduces the later expense of painting and varnishing to the minimum, and in addition it furnishes a finish in every way more satisfactory than could be built up on an insufficiently conditioned primary foundation. Particularly around axle clips and all metal fittings etc., should the scraper be carefully employed to the end that all accumulations and substances foreign to the surface may be unseated.

The running parts surface when thoroughly fitted for painting is fairly more than half finished. It calls for a very nice turn of skill, indeed. In high class city custom shops the workman charged with this preparatory surfacing is esteemed one of the most important members of the shop force. In case of sickness he is a hard man to duplicate, for the reason chiefly that men who really become interested in this work are scarce.

Upon the old surface about axle clips, wheel rims, etc., are spaces which carry accumulations, and are burdened with fractures and splinters, which only thorough working down with the steel scraper and sandpaper can condition in proper shape. And quite generally, all over the surface there is to be found unsound paint and varnish structures, and flaking films, which must be cleaned off until a perfectly sound and healthy foundation exists. When this strength and soundness of surface is developed the painter is in a position to go forward with his work with perfect confidence in the quality and resources of the supporting foundation. When the strength of the foundation is beyond suspicion there is nothing to give way.

HUMIDITY IN THE VARNISH ROOM.

Extensive plans have been instituted with a view of eliminating this one important drawback to varnish room results, but despite these apparently best laid plans, humidity continues to disturb the finisher to a serious extent during August and the early part of September.

It has come to be recognized that the only factor that will render humidity harmless is heat introduced in some effective way directly to the varnish room. Humidity is part and parcel of those hot moist days—often called "dog-days," although not necessarily included in this unacceptable period—when the air is surcharged with moisture, and perspiration flows freely upon the slightest exercise of the individual. Various expedients are resorted to in order to counteract the action of the water saturated atmosphere, but the most practical—and in reality the only effective—system consists of the introduction of heat in a sufficient quantity to dispel in large part, at least, the peculiar dampness pervading the varnish room. This can be accomplished by means of a brisk fire in the shop store, or warmth forced through steam pipes, or hot air pipes, as the heating arrangements of the shop may permit. This heat, however, need not, and, in fact, should not, be long continued, for it fairly goes without saying that the air may be made too dry for working varnish with the best results. A few minutes of good heating by whatever method is most convenient will usually suffice to condition the air of the room, provided proper ventilation is furnished, to meet immediate requirements.

What is needed in the varnish room is pure, fresh air with the greater portion of the moisture extracted, and this rule holds good whether the month be August or December.

Humidity to excess in the air causes the varnish to draw itself into a condition similar to the appearance of enamaled leather or silk. Perhaps needless to add, prevention is many times cheaper than cure in all cases of humidity.

THE FARM WAGON AND PROCESSES OF PAINTING IT.

In a late issue of The Hub we had something to say concerning side lines suited to the carriage and wagon painters' needs, and "lest we forget" it should be mentioned that the painting of farm wagons offers something in the nature of a side line, while at the same time it may be classed as a purely legitimate paint shop enterprise. This line of work, to be sure, is limited in quantity, but there is sufficient, nevertheless, to furnish the painter with some ready money at a time when money is scarcer than good deeds in a community of thieves.

The ready-mixed paint barons have of late years "knocked the bottom out" of the farm wagon painting industry, but there appears to be a reaction in favor of having the work done by a painter with some pretension to trade knowledge, and to-day in many provincial shops the visitor will find a farm wagon or two undergoing repainting. The green box and red running parts are, however, far from retaining their old time popularity, and at the present time the drift is unmistakably in the direction of dark, neat browns, modest reds, siennas, umbers, etc., for the farm wagon box. For running parts canary yellow, straw color, lemon chrome yellow, sulphur yellow and light buff are the favorite pigments.

Generous free hand ornamentation, as of old, continues popular, as it may well be, for, after all, nothing brightens up the color effect and contributes to the betterment of the general appearance of the finish as much as a nice arrangement of ornamental work on the heavy farm wagon.

Of fine surfacing there need be none, hence the use of roughstuff is eliminated altogether from the issue. Over those panels

Digitized by Google

which show an open, eaty grain, with a bristling fibre, it is good practice to draw putty to the extent of closing up this open grain formation. Virtually, this is the only surface filling required. The use of raw linseed oil in modern farm wagon painting is restricted to the bare necessity of binding the paint to the surface. More than this, under present conditions, may be considered detrimental to the durability of the work.

In this connection the platform wagon may be classed, with all propriety, as a farm wagon, since it has practically gone out of style with all other classes of people and remains in prime favor with the surburban and farm residents.

A departure from the traditional black body and wine color running parts for the platform wagon is to be remarked. The center panels on the body are now painted deep, rich maroon, or olive or quaker of brewster green, with outside border in black. Seat panels are likewise painted in any one of the above colors chosen for the body, with black border. Running parts are painted in light maroon or some light effective green. The striping is confined to straight line work, except perhaps a simple design of cut up striping for the panel corners. The double and three line stripe is much used in striping the platform wagon running parts.

Where the surface of the body is new or burned off the paint structure should be brought up in the usual way with plenty of roughstuff to assist the surfacing, and a rich flow of varnish above all to increase the depth and brilliancy of the finish.

RAVEN WING BLACK.

The Return of an Old Favorite—Method of Mixing.

Recently Hub readers have noted no small stir among the users of heavy pleasure vehicles concerning the merits of "raven wing black." It is described, properly enough, as an intense black with a brilliant blueish tinge to it, or tone, to speak technically.

Raven wing black is no late arrival in the world of pigments, as older readers of these columns know full well. It is simply an old color endowed with a sparkle of renewed popularity. Society has smiled upon it, New York boulevards have exhibited its charms, the golf links echo its praises, and verily the vehicle users of the country over are asking for it.

Now raven wing black is just merely ivory black toned up with a grain of Prussian blue, and a pinch of burnt umber. There is no exact, unalterable standard of shade, since every individual mixer is a law unto himself in this respect. However, the above formula, carried out, will develop a raven wing black rich and beautiful when cast upon a fine surface and enriched with a generous supply of equally fine varnish.

FITTING A FOLDING EMERGENCY SEAT TO A VICTORIA.

Illustrations accompanying.

In carriages that are strictly designed to carry two in the body it is frequently sought to fit them up with emergency seats, but so concealed that they may not present an objectionable appearance to the general outline of the carriage exteriorly. The same thought is exercised in carrying, out this provision on the inside of single and double broughams. But, although such

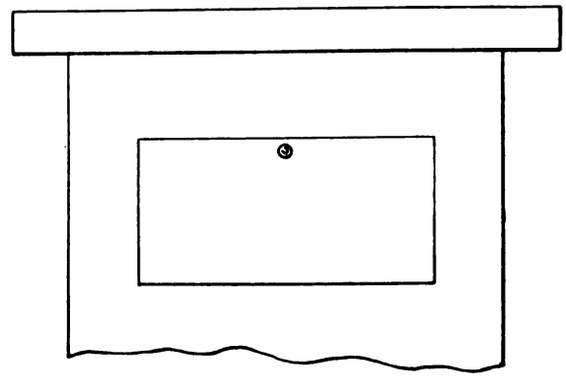


Fig. 1

fittings are welcome needs at times of emergency, yet they do not tend to improve the outside nor the inside appearances of the carriages which are fitted up with them.

Fig. 1 shows the back of a boot of a cabriolet body with an emergency seat fitted into it. The hinges of the seat are stop jointed, so as to hold the seat in position when down. The cushion is upholstered fixedly to the seat, thus avoiding a bulky stuffing when the seat is hinged up into the boot level with the panel. Though the seat is fitted to make a level surface with the back panel, still there is a break in the surface which is offensive to the eye, and for this reason high class work of the cabriolet type are never fitted with emergency seats to hinge up into the back of the boot without they are specially ordered.

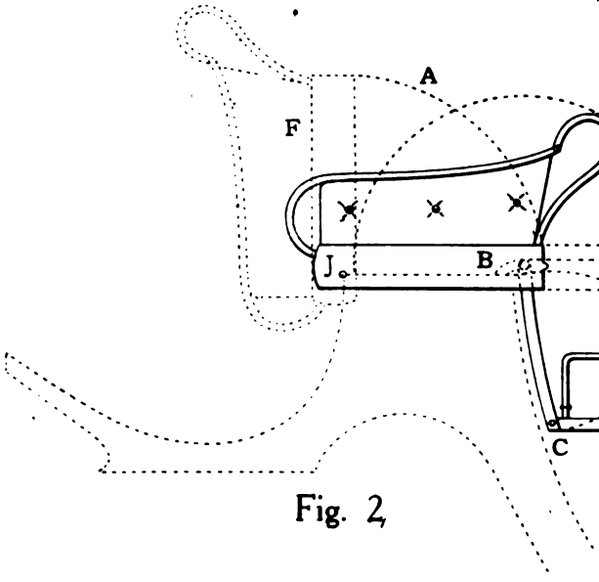


Fig. 2

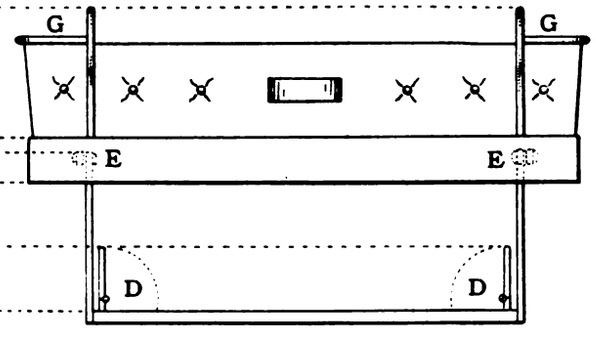


Fig. 3

These kind of seats are, however, made to hinge up out of sight by some high class London builders, and of this type the one shown in Fig. 2 is an illustration. The seat is made to hinge up outside of the boot entirely. The body seat is made with a hinge joint which is forged to the front edge plate of the boot and the seat hinges up in the direction of the line A.

The emergency seat is fitted with hinged levers centered at B and C. The hinge B is forged to a strap plate end which is

Digitized by Google

fixed to the inside of the boot side. The neck of the hinge being shown at point B. The side rails of the emergency seat are also forged to fold down as at D D and the hinge B at E E, Fig. 3.

When the seat is not in use, it folds up in the lines of the tracks shown from the joint centers and drops on a line below the top of the boot side, then the front seat F falls down over it. The seat is left in open frame, and a box cushion is fitted with hollow inside so as to cover over the projecting centers of the folding joints.

The boot seat rail is forged in curves, which are pleasing, while the side of the rail is cranked 5 in. inward, as shown at G G, Fig. 3, and a handle forged as at H, Fig. 1. This is for the purpose of lifting the front seat up on the hinge J. The seat cushion box is made to line with the top of the side rail, so that the seat and fittings all move together when lifted upwards on the hinge at J.

These seats, in whatever method they may be fitted up in, are at times a great convenience in taking an extra occupant, and in the country this is found an advantage, but on a town carriage the seats as shown in Fig. 1 are rarely seen for the reason that they destroy effect in surface.

are a lighter shade of blue. Striping is gold. The gear is black with light blue and gold striping. The lettering is gold, as well as the circle upon which the red cross is painted. A large brass plated gong is secured to the dashboard. The driver's seat is upholstered on sides and back in leather.

The builders are deserving of credit for the handsome manner in which the job was gotten up.

POINTERS FOR PAINTERS.

An English actor was asked if he wanted to rehearse with the company, and when he said "No," he was asked if he had any instructions; again he said "No," but added, "Tell them to keep five feet away from me and do their damned worst."

Speaking of varnish, it has also a trick of doing the same kind of worst, if it belongs in the second-rate class, and is not a star performer. For that reason painters have found it good practice to perform with the best. That which is the best is a matter of varying opinion, but it may confidently be said that those who have dipped their brushes in the Valentine or the Lawson brands feel that they have the support of the very best varnish,



Handsome New Ambulance.

Described on this page.

But of course where a seat can be fitted up to hinge out of sight as in Fig. 2 there can be no eyesore and so can be fitted without offending the sense of outline and proportion, and when necessity arises for their use, they are easily unfolded to position and returned out of sight.

HANDSOME NEW AMBULANCE.

Illustrated on this page.

The Biehl Carriage & Wagon Works, of Reading, Pa., recently completed for local use an ambulance which is very handsome in design and complete in equipment.

It is provided with batteries for illuminating the outside lamps besides one small incandescent light over driver's seat and two colored lights on interior of body. The trimmings are of brass.

Instead of the ordinary brake which contacts the tire, a band brake, such as is fitted to automobiles, is used. This arrangement prevents wear and tear of rubber tires. The center panel of body is painted dark blue, while the upper and lower panels

and that the work done reflects a double credit on material and the wielder of the brush. The Valentine announcements in the present and succeeding issues carry useful information to the painter.

CARE OF RUBBER MATTING.

One of the problems that confronts the man who drives and cares for his own car is how to keep the rubber matting looking presentable, says the India Rubber Review. As a general rule the matting will begin to lose its uniform color after it has been in use for some time, as the oil and grease that is certain to be tracked onto it discolors it and has a tendency to rot it. If the matting is painted with lead-colored paint the destruction and discoloration will be prevented and the paint when dry will have a surface like varnish. The paint will not only make the matting oil proof, but it gives a permanent look of newness to the matting and enables it to be cleaned whenever needed by means of a cloth or a bit of cotton waste.

Digitized by Google

General Topics of Interest to Trade

PROPOSE ENTERTAINING THE C. B. N. A.

A committee of the associate members of the C. B. N. A. has recently submitted to the members of that body a proposition which will, if met with general approval, overcome many difficulties encountered at previous conventions. The scheme is plausible, as it does seem proper for accessory manufacturers who are profited by these annual meetings, to contribute to the entertainment of carriage manufacturers. The communication follows:

New York City, July 15th, 1908.

Dear Sir—At a meeting in New York of the associate members of the C. B. N. A. during the convention, last October, of the Carriage Builders' National Association, a resolution was adopted favoring a better way to obtain the fund that is required for the suitable entertainment of the members of the C. B. N. A. and their and our friends at the annual conventions. A committee was appointed to make the resolution operative.

Those attending these conventions are our customers, and we are naturally benefited by meeting them, and, therefore, ought to aid in making these conventions a success.

The custom has been to rely on the efforts of a committee in the city in which the convention is held to supply the fund. This has been found to be unfair and unsatisfactory. A better plan, one more in keeping with the national scope of the organization, would be to raise the amount necessary to aid the C. B. N. A. among the associate members who are selling goods to the vehicle builder and by systematizing the effort and making the call general, materially reduce the per capita amount of the contribution.

Every associate member who attends these annual meetings receives some benefit, either in the shape of new business, or the renewal of old friendships, and it would appear to be proper for us to aid in making the conventions a pleasure to all those from whom we receive business.

Your committee, therefore, proposes that you notify it if you will enroll your name as contributor to this fund. When the local committee in Chicago, where the convention is to be held, October 11-17, advises us of the amount needed, our members will be notified what the pro rata contribution is to be. Adjusted in this way, it will not be an amount that all cannot cheerfully contribute.

Your committee proposes that every enrolled subscriber to the fund shall be supplied with a distinctive button or badge, for himself and his representatives attending, to be worn during the convention week, so that carriage men may distinguish who are their hosts. Only subscribers will be entitled to this distinction.

We outline the plan at some length that you may have a clear idea of what it means to you, and if the consents are general among the trade, the outcome will be a happy one for all.

Your prompt reply to this first step is very necessary, and your committee hopes it will be that of consent and approval.

Very respectfully,

The Committee

O. B. Bannister, (Muncie Wheel & Jobbing Co.)
Chas. B. Beckwith, (Beckwith-Chandler Co.)
John McGrath, (Eberhard Mfg. Co.)
Henry Higgin, (Higgin Mfg. Co.)
C. H. E. Redding.

Replies should be adressed—C. H. E. Redding, Room 904, 320 Fifth avenue, New York City.

Bulk of body never made any man great.

SUIT AGAINST FRANK P. D'ARCY.

Te Ventilated Cushion & Spring Co., Jackson, Mich., has brought suit against Frank P. D'Arcy, head of D'Arcy Spring Co., Kalamazoo, Mich., for infringement on their patents pertaining to the manufacture of cushion springs.

The Ventilated Cushion & Spring Co. own a number of patents on spring constructions containing auxiliary or supplementary springs and have several other applications pending for patents on spring constructions containing auxiliary or supplementary springs. They are the originators of this class of spring work, and their patents and applications for patents, it is claimed, completely cover this class of spring structures with the auxiliary or supplementary springs.

C. H. A. T. TO GIVE BEEFSTEAK DINNER DURING CARRIAGE SHOW WEEK.

As previously announced in these columns the Carriage, Harness & Accessory Traveling Salesmen's Association will have a beefsteak dinner on Thursday, October 8, 1908, which will be during the week of the New York carriage show.

The dinner will be held at Reisenwebers, Columbus Circle. This place has a world wide reputation for functions of this kind.

The formalty of beefsteak dinners will be rigidly enforced. Large butcher aprons and towels will take the place of dress suits and napkins, and beer kegs and barrels and boxes will supplant mahogany tables; the steins in which the "buttermilk" will be served are being made with a suitable inscription, and will be retained by the guests as souvenirs of the occasion.

A vaudeville entertainment of celebrated artists will add to the attraction of the evening during and after the dinner, and the efforts of the committee promise that this affair of the C. H. A. T. will be the feature of convention week.

OF INTEREST TO REPAIRERS OF VEHICLES.

Alfred Reynolds, president of the Reynolds Carriage & Mfg. Co., of Joplin, Mo., has inaugurated a movement among the carriage and automobile shops of that city to have a law enacted at the next session of the general assembly of the Missouri legislature, whereby repair men can file a lien on a vehicle repaired any time within ninety days after the work is done for the unpaid account and, if possible, also to make the lien hold good on the vehicle for said charges, even if the vehicle has changed ownership.

Every repairman will greatly appreciate a law which will reduce his bad debts and force the delinquent or dishonest customer to meet his obligation. Some such law would be of vast benefit to every repair shop and would work a hardship on none, but would prevent a great deal of abuse of the credit system.

INTERNATIONAL HORSE SHOW A GREAT SUCCESS.

Regarding the recent international horse show held at Olympia, a writer in our English contemporary, The Road, has the following pleasant remarks to make:

Probably never in the annals of the horse world has such a successful show as the one just finished at Olympia ever been seen. Not only were the entries the most numerous, but the exhibits themselves were by far more valuable than any other similar event in history. This applies both individually and col-

Digitized by Google

lectively. And I believe that the gate—taking the entire show—was easily a record one in every respect.

Comparing this year's show with that held at the same place in 1907, there was a distinct and most marked trend upwards in every way, from A to Z. Not only was a much larger sum spent in preparing and decorating the hall, but also in decorating both the building and upholstering of the stables belonging to the different owners, these being in themselves well worth paying a visit to the exhibition alone to see.

It sounds absurd to speak of upholstery in connection with a stable, but those who were so fortunate as to have seen this show will readily understand my phrase in this connection. Not only is upholstery the proper word, but it was executed on such lavish lines, and the display made so charming, that I may say without exaggeration, even though the phrase does seem a fairy story, that many a suburban or country villa of the present day is far less well furnished than were these stables, especially those devoted to horses of millionaire owners.

It was not necessary to inquire if the public appreciated these side shows, as I may be pardoned for calling them. One had only to look at the crowds in the different avenues, lined with loose-boxes on each side, to render this question unnecessary. A little fancy box, with a glass front, was placed over the doorway of each individual box, containing the horse's name, and the various rosettes won by its occupant at the show, so there was less need to worry the groom in charge for particulars than is usually the case, thus combining both the useful and ornamental.

In the ring the various competitions were in every way much more severe than formerly. Where everything is, of course, as spic and span as it is possible for human care, industry and forethought to make it, the judges were not only a long time in making up their minds, but subjected the various competitors to the most rigorous examination before deciding on the different winners.

TO MANUFACTURE CARRIAGE GEAR WOODS IN ST. LOUIS.

D. P. Cooper and other Struthers, Ohio, men have bought land in St. Louis and will build a factory there for the manufacture of carriage gear woods and other parts of carriages. The new factory will be in the nature of an adjunct to the old factory in Struthers.

Mr. Cooper is president and general manager of the J. A. and D. J. Cooper Co., of Struthers, Ohio, which is the largest and one of the oldest concerns in their line. He retains his interest in the old company, and a number of the old stockholders are stockholders in the new, which makes this in a measure a branch of the old company, although a separate organization. Ralph M., son of D. P. Cooper, who for several years has been superintendent of the Struthers plant, will have actual charge of the St. Louis plant.

Ground will be broken at once for the erection of a factory. The construction will be of brick and concrete, with steel roof supports. All machinery will be driven by electricity, and thoroughly modern in every respect.

BIG TIMBERLAND TRANSACTION IN WEST VIRGINIA.

What is said to be the largest single sale of timberland in the history of West Virginia has been made by the Baltimore and Ohio Railroad Company to a corporation which will at once begin development. The purchasing company has mills at Ridgeway and at Camden-on-the-Gauley, within reach of the tract. The combined capacity of its mills is 350,000 feet a day. Two million dollars is the reported price paid for 200,000 acres of hardwood, chiefly virgin forest, containing yellow poplar, cherry, oak, maple, birch, ash and many other valuable woods.

The land lies in a mountainous region drained by northeastern tributaries of the Great Kanawha, which empties into the Ohio about 300 miles from Pittsburg. It is one of the largest and most valuable bodies of hardwood timber remaining in the Appalachian region. Many of the mountain ranges which cross the tract are from 3,000 to 4,000 feet high, and covered to their summits with rich forests.

North of this tract, but drained by the same streams, lies another holding of 129,000 acres, recently secured by a pulp company. This is covered with spruce and hemlock, with many patches of hardwoods. Development of the property, it is said, will begin in the immediate future. The two bodies of land, lying in the same region, aggregate more than 500 square miles of primeval forest about to be turned into marketable products.

CARRIAGE FACTORY FOR SALE.

In the advertising columns of this paper will be found an offer to sell a carriage factory in a large western city. This factory is a growing concern and the only reason for wishing to sell is to settle an estate. The building is five stories and basement, 90 x 133 feet, of brick and stone construction. Nothing finer of its kind in United States, and complete in every department. Plant, machinery, merchandise and good will; or will sell machinery, merchandise, good will, and lease the factory on favorable rental. Greatest bargain ever offered to the carriage public. In operation over fifty years and will continue whether sold or not.

SAN FRANCISCO CARRIAGE BUILDER VISITS NEW YORK.

We were recently accorded the pleasure of a visit to our office of Herman Wertsch, secretary of the Wm. Wertsch Company, of San Francisco, builders and repairers of carriages, wagons and automobiles. Mr. Wertsch visits the East periodically, combining pleasure with business on such trips.

The house with which Mr. Wertsch is connected has been subscribing to The Hub for the last twenty years.

NEW VEHICLE CONCERN.

The Florence (Ala.) Vehicle Co. has been incorporated with $10,000 capital stock, by A. D. Bellamy, H. M. Cressy and R. S. Smoot. Mr. Bellamy was connected with the Florence Wagon Works, of same place, one of the most successful wagon works in the South. He recently withdrew from that company and there was talk of removing it to another city.

WILL MAKE NEW TIRES.

The DeHart Steel Tire Company, capitalized at $100,000, will incorporate and erect a plant at Springfield, Mo., at once, employing fifty men. Colonel H. N. Phillips, of Poplar Bluff, is president and Mrs. M. H. De Hart, of Cincinnati, patentee of the tire, vice president; W. H. Hansell, of Springfield, manager and secretary.

MEMPHIS NECK YOKE PLANT SOLD.

The Memphis, Tenn., plant of the Automatic Neck Yoke Co., Indianapolis, Ind., has been sold to the Lack Singletree Co., Paducah, Ky. The Automatic Neck Yoke Company will continue to manufacture their automatic neckyokes and neckyoke centers at Indianapolis.

IMPLEMENT AND VEHICLE MANUFACTURERS MEET AT COLUMBUS.

The annual convention of the national association of agricultural implement and vehicle manufacturers will be held at Columbus, O., on October 20, 21 and 22, week following the C. B. N. A. convention at Chicago.

Many vehicle manufacturers attending the C. B. N. A. convention will avail themselves of the special train leaving Chicago at noon of October 19 arriving in Columbus early the same evening to attend that convention.

Digitized by Google

SOUTHWESTERN CARLOAD RATES IN TEXAS GO INTO EFFECT.

Theodore Luth, chairman of the Freight and Classification Committee of the Carriage Builders' National Association, has been informed that the new Southwestern carload minimums and rates for Texas territory only go into effect Aug. 10.

NEW YORK CARRIAGE SHOW.

The New York Carriage Show for 1908 will be held as usual in Grand Central Palace, New York City, October 5 to 10—Monday to Saturday inclusive.

SYMPATHY EXTENDED.

The many friends of Mr. W. W. Ogden, ex-president of the Carriage Builders' National Association, and head of J. M. Quinby & Co., of Newark, N. J., will be grieved to learn of the death of Mrs. Ogden, which occurred recently. The Hub extends to Mr. Ogden its sincere sympathies.

NEW WAGON PROJECT IN IOWA.

It is reported that a farm wagon industry is to be established at Boone, Ia. A company will be formed with a capital stock of $50,000, two-fifths of which will be subscribed by residents of Boone and the remainder by Osborne Wright, who now operates a small factory at Mexico, N. Y.

TRADE NEWS FROM INDIANAPOLIS AND OTHER PARTS OF INDIANA.

Indianapolis, Ind., July 5.—The Indiana wheat crop is exceeding expectations and the fall buggy and carriage trade promises to be larger than usual. Trade conditions are guided largely in this state by the outcome of the grain crops. Most of the carriage factories are now running full time and report very satisfactory business conditions. It is a noticeable fact that a large number of these concerns are entering into the manufacture of motor driven buggies, which, however, have not met with much success in Indiana to the present time.

The Marion County Board of Review has concluded its annual session in this city, fixing valuations of corporations for tax assessment purposes. Some of this year's valuations were: Bernd Brothers, $5,000; Sandstrom Short-Turn Buggy Co., $6-230; Guedelhoefer Wagon Co., $10,000; Implement and Vehicle Mfg. Co., $1,870; Irvin Robbins & Co., $8,000.

Within a few weeks the C. H. Stratton Carriage Company, of Muncie, will bring out a high wheeled type of motor buggy and will make an effort to obtain some of 1908 business in this line. This will be the eleventh Indiana company manufacturing such vehicles.

S. C. Parry, of the Parry Manufacturing Company, is making an extended tour through the Orient and will not return until early in the fall. Mr. Parry hopes to benefit his health and will travel extensively through India and the Phillippines.

C. C. Hull, president of the Rex Buggy Company, Connersville, made a short business trip to St. Louis recently. While in that city he called on H. M. Blake, manager of the Parlin & Orendorf Machinery Co., who represents the Rex line in St. Louis.

The H. T. Hearsey Vehicle Company, dealers in carriages and automobiles, have relinquished the agencies for the Marion and Marmon automobiles and will represent the White, Rambler, Overland and Pope Waverly in the future. Mr. Hearsey, head of the company, by the way, is interested in the newly organized Marott Department Store Co. as one of its heaviest stockholders.

A motor driven mower and plow has just been invented by A. J. Bunnell of North Judson, and he has been granted patents. The machine is especially designed for work in the Kankakee swamp lands where horses are sometimes unable to work because of water. With his machine Bunnell says he is able to cut hay in fields three inches under water and will mow from twenty to twenty-five acres a day. The machine is fitted with heavy traction wheels.

The Racine-Sattley Company is having a heavy vehicle business in this territory, according to P. J. Kirtley, the Indiana representative whose headquarters are in this city. While the business started out slow, Mr. Kirtley says the increase during the last few weeks has been gratifying and that the total business for the year will probably equal that of last year.

In order to manufacture steel vehicle wheels of all descriptions, the American Steel Wheel Company has organized with $250,000 at Alexandria. The directors and principal stockholders are J. G. Brannum, S. G. Phillips, and J. F. Merker.

RICH FIELD FOR MODERN WAGONS IN CUBA.

There is a great demand for modern vehicles in Cuba, says a special correspondent of The Implement and Vehicle News. The authorities in charge of the cities and towns are constructing new kinds of vehicle regulations, with the result that there are several types of the old-fashioned carts that cannot be used on public streets, because of the cumbersome character of the vehicles and their awkward and weighty appearance. Many of the old patterns of vehicles have enormous wheels and there are objections to the use of these great wheels on many of the thoroughfares. In fact, there are rules against passing through certain streets, except in one direction, because they are too narrow to permit the large wagons passing by one another. There are city and town regulations prohibiting the operating of the great creaking wagons with their illy lubricated wheels, except at certain hours. Therefore, in order to avoid conflicting with the ordinances of the cities and towns of Cuba, many persons are constantly on the alert for buying new vehicles, light in weight, rubber tired, and fitted with all modern improvements.

The native wagon has a brake, for example, which is worked like the old-time brake of the railway cars. In the event of danger of an accident ahead, the driver turns the crank for braking the wheels, and usually by the time he gets the brakes turned up the accident has occurred. Practically all of the native-made wagons are built too large and heavy for the native horses. The little animals have a great struggle handling the cumbersome wagons of Cuban manufacture.

The Cuban smith is inclined to design and construct the wheels considerably larger in diameter than the wheels of wagons in other lands. The tendency is to produce a wheel of enormous circumference, supposing that the greater the leverage thus attained the easier the cart can be hauled by the beast of burden. But the native workers forget that there is a limit to this argument. They go too far with the big-wheel idea, resulting in some wagons being exceedingly difficult for the animals to handle.

Furthermore, the average native cart is almost always of the two-wheel pattern. It is seldom that the Cuban wheelwrights build a four-wheel vehicle, although there is a very active demand for four-wheeled express wagons.

In recent years there have been a number of automobiles introduced, some of which are adapted for the carrying of heavy freight. The bulk of the express and freight service is, however, handled in ordinary vehicles hauled by horses or oxen. The oxen are always preferable for certain characters of vehicle service, in spite of the numerous objections, in recent years, to bringing the ox-carts through the streets of the cities.

The writer is convinced that the American express wagons would sell here. There are already quite a few American designs of express wagons on the island, but there is room for more. In one instance the buyer of one of these wagons removed the shafts and substituted a pole so as to haul the wagon with a pair of oxen.

Digitized by Google

Covered vehicles are desired, and manufacturers sending express or similar patterns of wagons here should have tops furnished. The top is not only to keep off the rain; but to prevent the intense heat of the sun from impregnating the cargo on the wagon. The Cubans like simplicity in wagon construction; therefore it was the custom of the Spanish manufacturers to send wagons in which there were not very many complicated parts.

The Cuban teamsters desire brakes on every wagon, and if a wagon is sent them without a brake the Cuban blacksmith will place one on that will be an eyesore. It will be some old patched-up affair which he has picked up from the junk heap.

The Cubans also want lights on their wagons, and you will find it necessary to furnish them with a lamp on each side of the front. This is a great acetylene light land, because carbide can be obtained in any quantity, and carbide lights are preferred to any other kind. They also like to have plenty of color and gloss on their wagons, and bright strips of red, pink and blue take well. The same can be said concerning the family vehicles. Victorias have predominated here for years, and it is time that other kinds of vehicles be introduced.

As to prices, the Spanish and Cubans have been well trained to paying high prices. Naturally the duties of cost of transportation add materially to the expense of getting conveyances here. Still these additional costs do not warrant the fixing of the high prices that now prevail in Cuba. However, the natives are willing to pay the prices for anything they want, and the manufacturers and the commission man can benefit. The commercial directories of Havana and Santiago give the lists of the important vehicle commission men in Cuba, and these men are always ready to hear from foreign makers of vehicles.

THE IDEAL FOREMAN.

To commence at the beginning, the ideal foreman, like the poet, is born, not made, says W. L. C., in an article appearing in The Woodworker. While it would not usually be good policy to employ a man to take charge of a room full of planers and molders who had little knowledge of mechanics, yet he had better lack that than to have no executive ability or knack of handling men. I do not believe that any man without this gift, call it what you like, can ever be successful as a foreman, however well experienced he may be or how good his mechanical knowledge.

It goes without saying that push and energy are prime requisites of the ideal which we are considering. I do not mean by this that a man must be continually on the jump, as the saying goes, but rather that every step, every move, should tend toward the accomplishment of a definite purpose, and he should endeavor to turn out a little more work every day than some one else could do under the same conditions. Here, as almost everywhere, high aims accomplish great results.

The foreman occupies rather a difficult and delicate position between his employer and his subordinates, his first duty being to see that the employer's interests are safeguarded, and nothing wasted, either material or time, both of which are the property of the employer, who pays his good money for them. From this viewpoint, the foreman is a trustee, under no bonds but those of honor, yet how few stop to consider this fact. Morally he is just as responsible as the administrator of a large estate. Thousands of dollars worth pass under his control during the year, and any loss due to his negligence or inefficiency is as direct loss to the owner as if the money were taken from the cash drawer.

On the other hand, he owes a duty to those under his charge, that duty which is embodied in the golden rule. Not only that, but as a matter of policy it is the part of wisdom to treat every one under his authority with equal and exact justice, which, in this case, I should consider a practical application of the golden rule. There are few employes who will not do more and better work for a boss whom they like and esteem, than for one who is constantly driving his help to keep them up to the mark. Of course, there are those who need to be driven, just as some horses need the whip occasionally, but I like to think that those are exceptions, and eye-servants are the poorest kind of help, anyway.

As I remember it, some one said in The Wood-Worker a few months since that the foreman should not associate with those under his charge outside the factory. It seems to me that such a statement is entirely out of place and smacks of snobbishness. While it is expected that men are chosen to be foremen because of fitness for the position, it does not follow that they are made of better clay than the ordinary run of mechanics. It has been my fortune to have charge of men to a greater or less extent for the last twenty years, and while I have had some men whom I should not care to be seen entering a saloon with, there have been others who were nature's noblemen and whom I feel proud to greet at any time and in any place. On the other hand, I have known foremen whom I certainly would not want to invite to my house. Mere position is a pretty small thing to be proud of.

The foreman should be thoroughly systematic in all his work, and ought to have a fairly definite idea every morning of what he expects to accomplish during the day, barring accidents. His work should be planned far enough in advance to provide for any supplies or material which may be necessary to complete it. This applies especially to factory departments which are dependent upon each other for parts of the finished goods. Suppose the foreman of an assembling room should attempt to complete a certain kind of goods, and find after starting that he was short some minor part because he had neglected to look it up beforehand. In such a case, he has to switch his men to other work, and valuable time is lost which can never be regained. Any one must admit the weakness of such management, yet similar things are happening every day.

Another important point is the keeping of every man provided with plenty of work in advance. The foreman who expects his men to keep chasing him for something to do is a poor specimen. Men will do more when they see plenty of work ahead than they will when they don't know what is coming next. There is always the temptation to nurse a job if there is nothing more in sight, and he who keeps the work driving the men a little all the time is the one who is going to come out ahead when the cost is figured up.

He should also set a good example by being on the job punctually and staying till working hours are over. It doesn't take long to demoralize a department when the men find out that the foreman is ony there for what there is in it. Of course, it is admitted that we are looking for the financial returns, but he who has no interest in his work beyond that has certainly no right to attempt running a job for anyone else. It takes lots of push and systematic, continued effort to accomplish definite results. Spasmodic periods of hustling, followed by times of depression, do not average up with persistent, determined, every-day effort. The steady worker who systematizes his labor comes out ahead in the long run, every time.

Most employers like to see departments kept clean as possible and material picked up in good shape. Waste which is of no value in manufacturing should go to the boiler house or scrapheap. Left-over parts should be carefully laid up for the next lot or made over into something. In these days of high and constantly increasing prices for lumber, special attention should be given to the cutting, and any ends not available for immediate use should be classed and arranged so as to be easily got at when needed.

Some foremen—and others—have a bad habit of adopting the workman's good ideas and exploiting them as their own, which I consider one of the meanest kinds of stealing. Of course, no strictly honest man would be guilty of it, yet it is a common fault. However, in this, as in other things, honesty will in the end prove to be the wiser policy, regardless of any question of right and wrong.

To sum up, the ideal foreman should have a bountiful supply

Digitized by Google

of tact, and that indefinable quality we call judgment; the ability to handle men with a minimum of friction; all the cardinal virtues, and none of the vices. He must be forceful, firm without being obstinate, and always ready to deliver the goods. In short, the ideal is perfection, and as perfection has not been attained by any human being, we shall continue to have all sorts of foremen; some excellent, some poor and many mediocre, who might be much better if they only cared to discover where their failings lie and correct them. There are few of us who cannot do this, to some extent at least, and so render ourselves more valuable to our employers and have the further approval of a good conscience.

MOTOR VEHICLES AND HORSE VEHICLES COMPARED.

By a Traveling Correspondent.

For several years many people have been predicting that the motor vehicle would replace the horse vehicle. The writer has been told time and time again that the horse was doomed, that the speedy up-to-date automobile would be the only means of transit, that vehicles hauled slowly over the earth by horse power would be abandoned, etc. For five years the event when horses and carriages would be worthless and every one would be riding in his automobile has been patiently anticipated. Once the writer became so enthused that he expected to see ten dollar a week clerks riding to work in motor vehicles.

However, in traveling over the land during the past year or two, some observations have been made. One noticeable fact is that the advent of the automobile has not, as yet, greatly reduced the price of horses. Someone stated that horses could be gotten cheaply because of the general introduction of the motor vehicle throughout the country. Investigation proves that horses have crept higher in price, if anything, and are scarce. The same condition applies to the carriage and wagon industry. While the modern automobile is a first rate conveyance for the well-to-do person, the expense is beyond the means of the average man. Possibly this fact alone prevents the general abandonment of the horse and the general introduction of the automobile. Surely it is a pleasant sensation to speed over the ground, but few can stand the pace at one dollar per hour, however, which is what it cost one man who tried the automobile in his business. He paid about $2,000 for his machine. His monthly repair bill gave him severe shocks and caused his interest in the machine to wane. Besides he had to hire a man to operate it and paid him more than the foreman of his shop received. One day he figured up the cost of operating the automobile during a certain period and divided it by the number of hours the car was used when an average cost of one dollar for each hour was found and caused him to sell his machine.

There are many men of business, however, who derive a rich return because of the fact that they use an automobile. Time is money to many of the captains of industry. The wealthy manufacturer can do better and more effective work if he can get about quickly, hence it pays him to have a machine even though it may cost him $2.00 per hour for the time he uses it. It matters little if a new fifty dollar tire is required monthly. Then there are the men and women with large incomes, who can afford to get a good machine. The doctor finds that the automobile is a great convenience in carrying him to the bedside of his sick patient in quick time. On the other hand, for quick local runs, the horse does just as well. Much depends upon circumstances. If the doctor has a limited practice he could not afford a machine; yet there are cases in which doctors who had a poor practice, built it up by using a motor-driven vehicle. In another instance, a surgeon by buying a car incurred indebtedness which compelled him to sell his machine.

There are so many things to consider in purchasing an automobile or a horse and carriage, that the problem is quite puzzling. One party tells that owing to bad roads he bought an automobile, hoping that the machine would convey him through the mud and slush, but the wheels "skidded" and the car was stalled a number of times, causing him to revert to horse traffic. Another friend in the country was struggling along in his business with three horses. An automobile agent happened along one day and talked him into buying a machine. The three horses were discarded and the automobile put into use, with the result of saving about two hours per day in his business trips, and very little increase in expense.

So many different sides of the story of automobiles and horses are presented that one is unable to draw conclusions. First of all much depends upon conditions. The agent selling machines on commission through the country ought to examine into the requirements of his prospective buyer. There are many men in various callings in the United States and other countries who would be greatly benefited if they possessed reliable high speed motor vehicles. There are others who would not only be handicapped by the use of the machines, but would be unable to support one. Many idle and broken down machines are placed away in sheds, which is injurious to the business. Sometimes the owner is unable to run it or has become disgusted with it owing to expense of running and returned to the horse. We must remember that the cost of overhauling automobiles is high. One case is recalled in which a first-class machine was purchased and used seven months, when it showed indications of needed repairs. The owner was not wealthy, he had borrowed to buy the car, and had kept himself in debt making repairs and paying for some one to operate the machine for him. An agent from the builders appeared one day and estimated $400 as the cost of putting the machine in perfect condition. The owner placed the car in storage at his home and left it there. Soon after another case in which a man ran a laundry in the suburbs was heard of. Business had been dull, yet the enterprising man purchased an automobile and started in collecting laundry from distant points. In a few months he had increased his business to such an extent that he engaged a superintendent, hired a man to collect, and purchased a motor car for his private use.

Nevertheless, while men are riding and experimenting with the modern automobile, the horses and the carriages are still the standbys. You can get a man to look out for your horses and carriages for twenty dollars per month and board, and will sleep in the stable. The chauffeur demands one hundred dollars per month and good quarters. Your stable man keeps the rigs in shape at a moderate cost, while the chauffeur runs up bills for tires and various repairing that give you sleepless nights, until you get accustomed to it. A man with a positive income, or one who has to reach patients quickly, or who can develop his business by the use of the automobile, never laments when he installs one or more. But the average man, who is used to paying horse-vehicle bills receives severe jars on his nerves when his experienced automobile man comes for his monthly wages, and at the same time exhibits costs of repairs and sundry articles.

LARGEST BAND-SAW EVER MADE.

A lumber and shingle company of Hoquiam, Wash., was the first to use a band saw 20 in. wide. This band, which was made to order, is said to be the largest ever made. Its length is 65 ft. and the teeth are spaced 3 in.

CARRIAGE MAN TO CIRCLE THE WORLD.

Harry Westcott, of Richmond Carriage Co., son of the late John M. Westcott, left Richmond, Ind., on July 30 for Dayton, O., from which place he started during the following week on an auto trip around the world.

Mr. Westcott will cross the continent to San Francisco, and will sail for the Orient late in the fall, taking his sixty horse power racer with him. He expects to tour each country he visits, and will give himself two years for the trip.

Digitized by Google

Recently Granted Carriage Patents

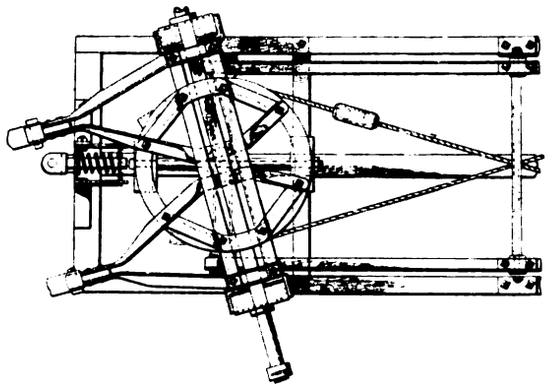
Space will not permit us to illustrate all new patents pertaining to the vehicle industry issued by the Patent Office. We therefore select those that we consider of the greatest interest to our readers.

Steering-Wheel Gear for Road Vehicles. Louis H. Campbell, of Portland, Ore., assignor of one-half to A. A. Lindsey, trustee, of Portland, Ore. No. 891,205. Patented June 16, 1908.

This invention relates generally to that part of the running gear of road vehicle which includes the front, swiveling or steering-wheel gear, and the draft and steering appliances therewith connected.

The object is to simplify the construction of such wheel gear; and in connection therewith to obtain light weight, and reduced cost, without sacrificing strength or durability. Furthermore, to obtain a gear wheel which is of all-metal construction.

The style of gear shown is of the platform type. It comprises parallel members, secured by braces, hollow posts and



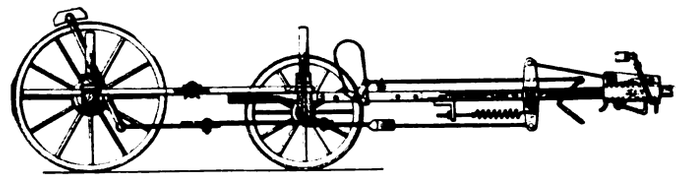
bolts, to the lower circle of the fifth wheel. The upper member of the fifth wheel is rigidly secured to the underside of the bolster, which bolster and the fifth wheel are connected to the central sill by means adapting the vehicle body and the wheel gear to oscillate transversely independently of each other. Such connection is effected by means of an oscillating pin extending through the bolster, the ends of which pin are journaled in hinge lugs, bolted on the underside of the sill, and shoes made with perforated flanges, which shoes are bolted on the upper member of the fifth wheel. The lower member of the fifth wheel rotates about a short king bolt. On the section of the oscillating pin, intermediate of the bolster and the shoes, are sleeves.

Wagon Brake. Rolla A. Griswold, of Dundee, Ill. No. 891,247. Patented June 23, 1908.

This invention relates to wagon brakes and particularly to the type of brakes which are automatically set by the holding back of the horses, and has for its object to simplify and improve apparatus of this character. It has for a further object to provide a new and improved device for locking the brake setting apparatus, so that in backing, for example, the holding back of the animals will not cause the brake to be set, such locking apparatus being provided with means by which it is held either in its locking or leasing position.

Another object is to provide an elastic devise, the tension of which may be regulated, and in which is included the brake setting device, against the tension of which the brakes are set.

The apparatus operates as follows: The horses are attached to the wagon in the ordinary way. The ring of the neck yoke being slipped between bolt and projecting part, when there is a back pull on the neck yoke, for example, in going down hill, the yoke pulls back against the thimble and the thimble slides backward on the pull, provided the locking device is set in its disengaged position as shown. The backward movement of the thimble rocks lever and throws the brakes backward against the wheels. It will be seen that the pole and front axle may be turned without interfering with the brake setting apparatus, the



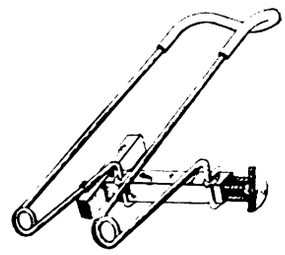
latter operating equally well when the wagon is on a turn. The pole may also be tilted upward without obstruction as far as it is customary to do this. When the wagon is lengthened it is only necessary to change the bolt connecting the rear sections of the operating rod.

Vehicle Top Support. Luther L. Allen, of Gustine, Texas. No. 891,321. Patented June 23, 1908.

This invention relates to new and useful improvements in vehicle top supports.

The object of the invention is to provide a resilient support of a compact and simple nature and one which may be readily placed in position. Another feature resides in the construction of such a support of stout wire, coiled to give the desired elasticity and at the same time the necessary support and leverage.

A still further feature lies in the yieldable tubular covering for the receiving end of the support which is simple and readily applied. Finally the object of the invention is to provide a device of the character described that will be strong, durable and



efficient, comparatively inexpensive to produce, and one in which the several parts will not be liable to get out of working order.

What is claimed is:

A vehicle top support formed of a single piece of wire comprising loops adapted to fit on the brace bolt of a vehicle top, upright portions extending from the loops, portions extending forwardly from said upright portions and terminating in coils, and portions extending back from the coils over the said forwardly extending portions and beyond the loops and terminating in a top receiving portion.

Vehicle. Irving Cowles and Ernest H. MacDowell, of South Haven, Mich. No. 891,328. Patented June 23, 1908.

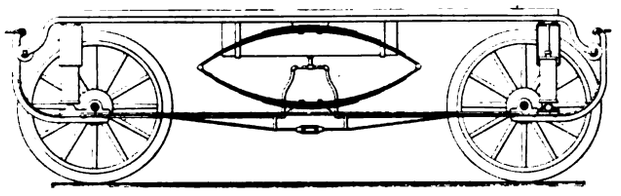
This invention relates to improvements in vehicles. These improvements are designed more particularly for motor cars, such as automobiles, but are desirable and of advantage for use in various other relations.

The objects of this invention are: first, to provide an improved vehicle in which the body is supported by very elastic springs and at the same time one in which the body is very steadily and evenly carried. Second, to provide an improved vehicle in which

Digitized by Google

the rocking and swaying of the body are reduced to a minimum. Third, to provide an improved vehicle in which the springs are very elastic and at the same time are capable of carrying very heavy loads without danger.

Arranged between the body and the side bars preferably in a central position are double elliptic springs. At each end, preferably at the rear of the rear axle and in front of the front axle, are pneumatic spring devices, the same consisting broadly of cylinders and plungers, the cylinders being connected to the

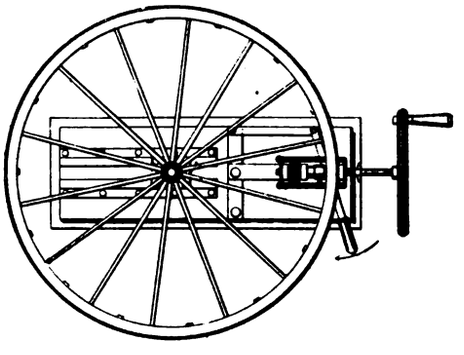


side rails by ball-and-socket joints, the socket members being arranged on the side bars and body and the ball members on the cylinders and plunger rods.

Casings are provided for the plunger rods, the lower ends of which embrace the cylinders and are adapted to reciprocate thereon. This protects the plunger rods from dust and dirt and also the plunger rod packing. The cylinders are preferably connected to a common chamber or tank by means of pipes, the plungers acting against the pressure in the tank. The tank is preferably partially filled with oil or other liquid, the liquid also filling the cylinders below the pistons and the pipe connections for the cylinders to the tank.

Tire-Bolting Machine. Joseph Hemsley, of Trenton, N. J. No. 891,338. Patented June 23, 1908.

This invention relates to the fastening of tires to the fellies of wheels; and it has for its object to provide a simple, inexpensive



and easily operated machine constructed with a view of facilitating the bolting of tires to wheel fellies.

With the foregoing in mind, the nature of the invention and its novelty, utility and practical advantages will be fully understood from the following description and claims when the same are read in connection with the drawings, accompanying and forming part of this specification, in which:

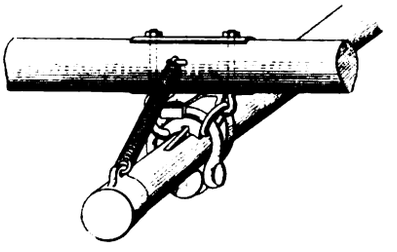
Diagram is a plan view illustrating a wheel properly arranged, relative to this novel machine, in order to permit of a nut being expeditiously turned on or off a bolt extending through the tire felly of the wheel.

One of the claims is: In a machine for the purpose described, the combination of a base, an abutment on the base for preventing movement of a wheel in one direction, standards connected with and guided on the base and movable toward and from the abutment, a gear mounted between said standards, a wrench connected with said gear and opposed to the abutment, a shaft journaled in the abutment and the standards, a gear mounted to turn with said shaft and intermeshed with the first mentioned gear, a transverse yoke straddling the shaft in rear of the rear standard, a transverse yoke straddling the shaft in front of the abutment and the tractile springs connecting the ends of the said yokes.

Neck Yoke Attachment. Levi Carey, of Nashua, Ia. No. 891,404. Patented June 23, 1908.

This invention relates to new and useful improvements in neck yoke attachments for poles of vehicles, and the object of the invention is to produce a device of this nature so arranged that the neck yoke may adjust itself in any position without friction and affording means which may be attached in place by means of clasps and staples with clamping means, thus avoiding the necessity of notching the center for the usual metal or leather collar.

The invention comprises further a device of this nature so arranged that the neck yoke will not pound, as means is afforded for taking up the vibration and also in the provision of means

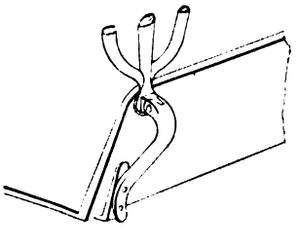


for holding the neck yoke upon the pole in the event of the tugs unfastening.

Buggy Top Fastener. George J. Wenzlick, of Iowa City, Ia. No. 891,451. Patented June 23, 1908.

It is well known that the ordinary form of prop nuts used to secure the bows of a buggy top or the like on the prop bolt projecting from the vehicle seat, are liable to catch the clothing and snag the same while getting in or out of the vehicle, and also that said nut works off its bolt and thus shifts the entire weight of the buggy top upon the opposite bows, which often break under the additional strain.

The object of this invention is an improved device which is adapted to be readily and quickly applied to the prop bolt without the use of a wrench, which is prevented from becoming accidentally disengaged from the bolt, and which will not snag the clothing. And a further object of the invention is a device of the character described which forms a brace for the prop, and which



also constitutes a convenient hand-hold to assist persons in getting in or out of the vehicle.

This improved device comprises a rounded and preferably curved body portion, which preferably tapers toward its lower end as shown, the upper end of said body portion being angularly disposed as indicated and formed with a threaded socket. The threads of this socket are designed to be engaged with the threaded extremity of the prop bolt and such engagement may be easily and conveniently effected since the body portion serves as a wrench to turn the upper end. The lower end of the body portion is designed to be secured by any suitable fastening means to the corresponding side of the vehicle seat or the bottom thereof.

Combined Front and Apron for Vehicles. William J. Campbell and George W. Hedrick, of Dayton, Va. No. 891,460. Patented June 23, 1908.

This invention relates to storm fronts and aprons adapted to be attached to a vehicle to protect the occupant or occupants of the vehicle from wind, rain, snow, etc.

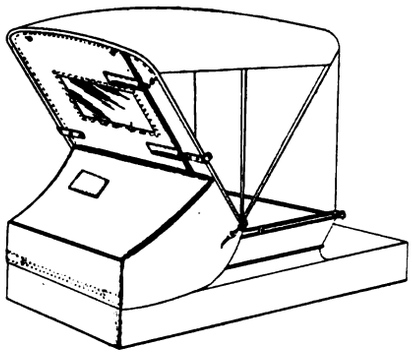
The object of the invention is to provide a combined front and apron in which the front and apron are made separate and

Digitized by Google

adapted to be detachably connected, whereby either may be used separately, or the two connected to form the combined front and apron for use as such when desired.

A further object of the invention is to provide a storm front with means to take up the slack and keep it properly extended, so as to fit vehicles having tops of different widths.

A still further and important object of the invention is to provide a combined storm front and apron which may be quick-

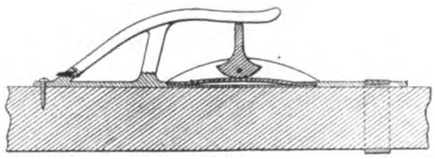


ly put in place and securely held against accidental displacement and which may readily and quickly be detached by the occupant of the vehicle without manipulation of its fastenings by hand, and without releasing the reins, so that the occupant of the vehicle in case of a runaway or other danger may readily jump from the vehicle.

Holdback Iron. Ray B. Carpenter, of Manchester, N. H. No. 891,668. Patented June 23, 1908.

This invention relates to holdback irons, and it has for its object to simplify and improve the construction and operation of this class of devices. What is claimed as new is:

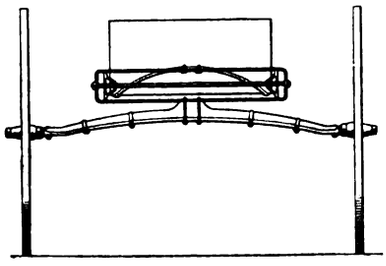
A holdback iron comprising a base having an outwardly extending stop arm and an inclined brace connecting said stop



arm with the base and extended beyond and forward of the stop arm to form a fixed guard, said base being provided along its edges beneath the fixed guard with upwardly extending curved flanges and a seat or recess between said flanges, a guard finger pivoted to move backward or forward between the flanges and having a curved head, and an upwardly curved leaf spring seated in the recess between the flanges and engaging the cam-shaped head of the pivoted finger to retain the latter normally in an upwardly extending position with its free end adjacent to the fixed guard.

Vehicle Spring. Francis G. Fletcher and John L. Register, of O'Brien, Fla. No. 892,041. Patented June 30, 1908.

This invention relates to a vehicle spring of a type applicable

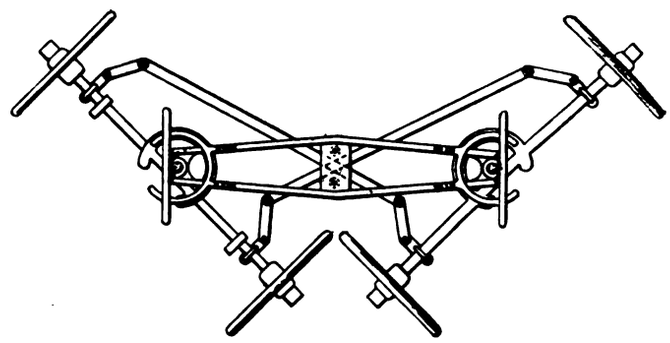


to a great variety of vehicles, and has for its main object to provide a spring which may be adjusted to the weight to be carried, and to this end it comprises a spring frame of rectangular form fastened at the center of one of its longer sides to the running gear of a vehicle and at the center of its other similar side to the vehicle body.

A spring thus constructed and mounted on a vehicle substantially in the manner described, if made of material of such width and gage as to afford sufficient spring action for a light load, would be too yielding and cause unpleasant jolting and shaking when the vehicle is carrying a heavy load. To overcome this defect and make the spring quickly adjustable to the weight to be carried, means are provided for easily and quickly changing the active length of the upper and lower spring bars, thereby stiffening the spring. The means comprises a round rod extending centrally from one end of the spring frame to the other and threaded at each end in opposite directions. The rod turns freely in the ends of the spring frame and project therethrough, carrying on each end a nut or other polygonally shaped head securely fastened thereto by a pin or otherwise.

Vehicle Running-Gear. Lewis B. Hart and Charles I. Dupont, of Plaquemine, La. No. 894,000. Patented July 21, 1908.

The purpose of the invention is to provide novel, simple details of construction for the running gear of wheeled vehicles, which



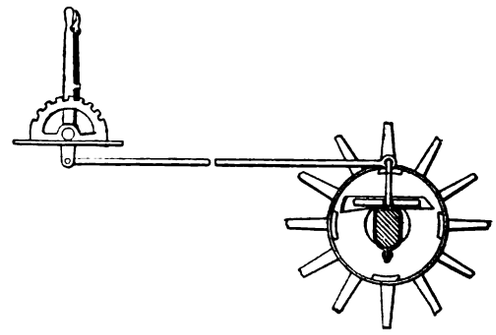
will adapt the vehicle to be turned in an arc or circle of very short radius, in a perfectly safe manner, and avoid excessive friction between working parts of the running gear.

The diagram accompanying is a plan view of the improved running gear, showing the relative positions of the parts thereof, when the vehicle is turned in a circle of small diameter.

One of the claims is: The combination with two axles, a fifth wheel located centrally on each axle, a bolster mounted on the movable upper section of each fifth wheel, a two-part reach, a central transverse yoke plate on the two sections of the reach, means for rigidly connecting the ends of the reach with the bolster, and means for loosely securing the ends of the reach upon the respective axles, of two similar coupling bars, clip bands on the axles near their ends, links pivotally connected to the clip bands and to the ends of the coupling bars, and anti-friction rollers carried by the yoke plate, which contact with the reach bars where they cross each other.

Vehicle Brake. John G. Miller, of Burlington, Ia. No. 894,029. Patented July 21, 1908.

This invention relates to brakes for vehicles and has for its



object to provide a brake especially adapted for light vehicles, such as buggies and carriages. It further has for its object to provide a light and efficient brake which will be neat and inex-

Digitized by Google

pensive and take up very little room, and further to provide a brake by means of which the wheels of a vehicle may be either braked or locked by the same brake with a single mechanism and at one operation.

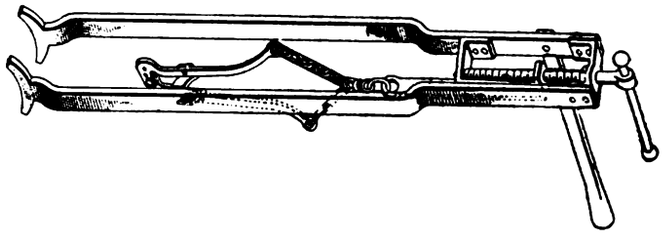
In order to employ the brake as an emergency brake to lock the wheel to the axle, the inner circumference of the annular rim is provided with suitable projections located at intervals on said circumference and adapted when the lever is thrown into elevated position to engage its end to lock the wheel to the axle.

When it is desired to merely brake the wheel by frictional engagement by pulling the lever the frictional end of the brakes will be thrown into engagement with the inner surface of the annular rim, and when it is desired to employ the brake as an emergency brake the lever is thrown to the position whereby its end will engage one of the stops on the inner surface of the annular rim, and lock the wheel to the axle and instantly stop the vehicle.

In order to unlock the brake from its locked position, it is simply necessary to move the vehicle back and then throw the brake into the position shown in illustration. By means of this invention a double brake is provided which will serve with both hind wheels of the vehicle to either brake them in frictional engagement or else by means of the same device and a single operating mechanism to lock them instantly in position, thereby providing a dual friction and emergency brake.

Spoke-Jack. James A. Alley, of Stoneville, N. C. No. 894,094. Patented July 21, 1908.

This invention has for its object to provide means for removing broken spokes from the hubs of vehicle wheels without marring, bruising or otherwise injuring the finish of the hub or other part of the wheel, while at the same time enabling the work to be performed in a rapid and effective manner.



When it is required to remove a spoke from a vehicle wheel, the machine is fitted to the wheel and having the legs or members of its frame straddle the same and engaging with end portions of the hub. The grapple is fitted to the spoke to be removed and upon turning the power screw, the free ends of the members are drawn inward, thereby causing the jaws to firmly grip the spoke, while at the same time great power is brought to bear upon the spoke to remove it from its socket in the hub.

BOOK FOR THE HOUSEHOLDER.

For every man, woman and child in this country more than a gallon of paint is used every year; and the relative amount is increasing. Paint is a necessity; it is an economy; it is a means of sanitation; it helps to keep us clean; it keeps us warm in winter and dry in summer; it brings light into dark corners; it beautifies our homes; it increases our credit; it raises our assessments; the most ignorant enjoy its benefits; and the most highly developed minds, whose culture is so profound that they have forgotten all they ever learned at college, retain its appreciation.

A book has recently been issued by John Wiley & Sons, New York, entitled "House Painting" and sold at one dollar. It tells simply and plainly the use of preservative coatings of one sort and another for the protection and ornamentation of common houses, as they are known, or should be to every one.

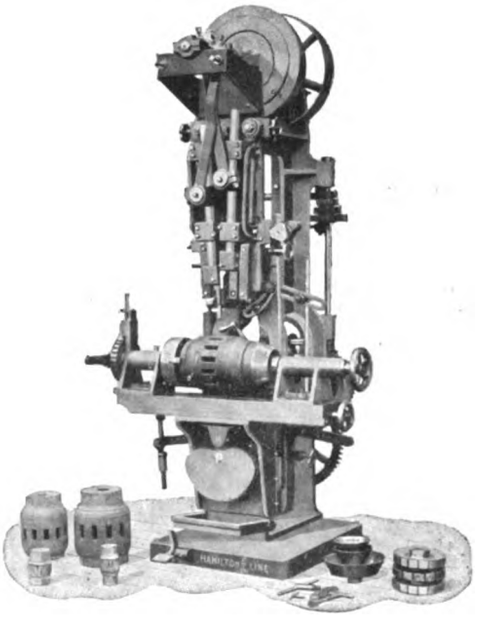
The secret of nine-tenths of the trouble that happens to men, or society, is ignorance.

HEAVY AUTOMATIC DOUBLE CHISEL HUB MORTISING MACHINE.

This machine is used for automatically mortising hubs from three inches up to eleven and one-half inches in diameter. The machine has a capacity of from 400 to 500 hubs per day of ten hours. Where one man operates two machines he can easily produce an output of from 800 to 1,000 hubs per day. The machine, which is built by the Bentel-Margedant Co., Hamilton, Ohio, makes either straight or stagger mortises and does both equally well and fast.

The frame is extremely heavy, giving solid support to all working parts. The chisel bar housing and crank shaft are made from the best cast steel and are accurately fitted and well-balanced.

The chisel bars are also made of steel and are provided with improved adjustment for producing the proper dish and angle in the mortise. This adjustment is made by hand wheels and screws and the position can be marked so that the adjustment can be brought back to that point without remeasuring for every different hub and spoke. The bars run in long babbitted boxes and the crank connections are made of the best bronze metal. Provisions are made for taking up wear in all these different parts.



Hamilton No. 264, Double Chisel Hub Mortiser.

The table is mounted on a heavy bracket sliding in dovetail slides on the front of the machine. It has all proper adjustments for raising and lowering and longitudinal adjustment for bringing the hubs into proper line with the chisels.

The head and tail stocks are mounted on top of this table in accurate line with each other and at right angles to the chisel bars. A three-jawed universal chuck is provided on the headstock for holding and centering the hub. The tailstock is provided with a cup center for the proper holding of the hub at that end.

The chisels and boring bit are both driven by means of a double friction pulley placed on the frame overhead and which can be controlled by both foot treadle and hand lever. Any number of mortises can be made in a hub by simply changing the index wheel on the outer end of the headstock. Four of these index wheels are provided with the machine. A pawl engaging in the notches of these index wheels revolves the hub automatically to the new position at the completion of each mortise.

The boring spindle is mounted in the frame at right angles to the chisels and in exact line with the center of the hub when

Digitized by Google

the table is at its lowest point. It is operated by hand while the hub is in the lowest position and the hub is turned by hand lever which engages the pawl on the index wheel.

All parts of the machine are accurately fitted and provided for quick and convenient adjustment and the machine is of the best possible workmanship throughout.

RECENTLY EXPIRED PATENTS OF INTEREST TO THE VEHICLE INDUSTRY.

PATENTS EXPIRED JUNE 16, 1908.

454,069—Draft Equalizer. W. Z. Runkle, Delphi, Ind.
454,157—Road Cart. L. M. Smith, Romeo, Mich.
454,213—Axle-Setting Machine. G. W. Hunter, Fresno, Cal.
454,329—Thill Coupling. A. Burger, Philadelphia, Pa.

PATENTS EXPIRED JUNE 23, 1908.

454,519—Vehicle Brake. J. Egge, Wrightstown, Minn.
454,621—Vehicle Shaft Holder. P. P. Sauble, Shamburg, Md.
454,688—Wheel Hub. G. H. Smith, Webster, W. Va.
454,714—Spring for Vehicles. G. E. Combs, Utica, N. Y.
454,734—Draft Equalizer. A. W. Hatfield, E. Hatfield and W. N. Hatfield, Correctionville, Iowa.
454,768—Vehicle Spring Gear. P. L. Ramsey, Schochoh, Ky.

PATENTS EXPIRED JUNE 30, 1908.

454,859—Road Cart. C. Fanney, Polo, Ill.
454,878—Thill Support. E. A. McGoldrick, St. Paul, Minn.
454,892—Draft Equalizer. S. H. Tinsman, Morris, Ill.
454,930—Vehicle Hound. G. Erdle, St. Louis, Mo.
455,119—Whiffletree Coupling. W. A. Schleicher, Cleveland, O.

PATENTS EXPIRED JULY 7, 1908.

455,312—Draft Equalizer. W. Davey and J. W. Chaney, Winfield, Kan.
455,399—Dumping Wagon. J. A. Head, Greenfield, Ohio.
455,593—Machine for Forming Fan Tail Axles. L. D. Hill, Wilkesbarre, Pa.
455,603—Vehicle Spring. Wm. Atkinson, Granby, Canada.
455,639—Wagon Step. H. R. Roden, Liberty Hill, La.
455,678—Thill Support. J. A. Adams, Dresden, Tenn.
455,694—Wrench for Vehicle Wheels. E. H. Steltz, East Greenville, Pa.

The above list of patents of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City.

RECENTLY GRANTED PATENTS OF INTEREST TO THE VEHICLE INDUSTRY.

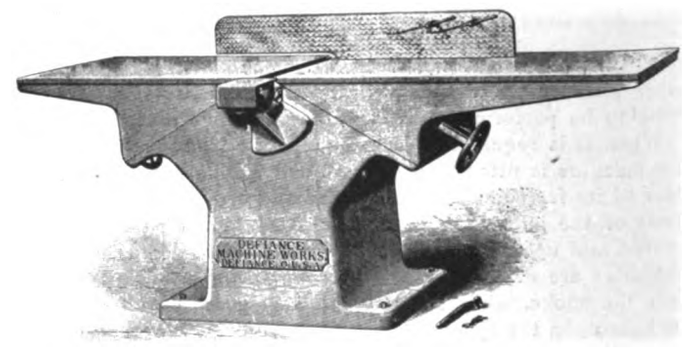
888,778—Vehicle Seat. C. F. Barndt and W. J. Miller, Columbus, Ohio.
888,584—Vehicle Reach. J. M. Bryant, Cleveland, Ohio, assignor of one-half to J. L. Henry, Rochester, N. Y.
888,793—Dumping Wagon. J. J. Enley, Philadelphia, Pa.
888,601—Dumping Bed or Body for Vehicles. T. A. Faughnan and E. L. Faughnan, Elizabeth, N. J.
889,006—Draft Equalizer. J. O. Helgeson, Decorah, Iowa.
888,504—Wheel. A. L. Jimenez, assignor of forty-five one-hundredths to W. Freeman and five one-hundredths to J. L. Jimenez, New York, N. Y.
888,906—Cushion Tire. J. B. Jordan, Nashville, Tenn.
888,823—Vehicle Tire. H. A. Knox, Springfield, Mass.
888,626—Wagon. E. C. Litchfield and D. Garst, assignors to Litchfield Manufacturing Company, Waterloo, Iowa.
888,628—Tire-Tightening Apparatus. G. R. Macomber, Chicago, Ill.
888,632—Whiffletree Clip. A. Miller, Syracuse, N. Y.
889,069—Pneumatic Tire. C. E. Titus, Springfield, Mass.
888,673—Wheel. C. B. Van Horn, Philadelphia, assignor to Guarantee Title and Trust Co., trustee, Pittsburg, Pa.
888,948—Storm Top for Vehicles. T. A. Welshans, Montezuma, Ind.
889,077—Spring Wheel for Road Vehicles. F. Wicks, Esher, England.
889,742—Rein Holder and Tightener for Vehicles. J. Altmeyer, East Spokane, Wash.
889,190—Thill Coupling. N. M. Bell, Aurora, Ill.
889,295—End Gate for Wagons. C. E. Carroll, Hamler, Ohio.
889,296—End Gate Fastener. L. and J. A. Carter, Asherville, Kan.
889,587—Thill Coupling. D. W. Copeland, Syracuse, N. Y.
889,451—Automatic Wagon Brake. C. Garver, Fort Wayne, Ind.
889,303—Wagon Dump. S. Guth, Washington, Ill.
889,603—Dump Wagon. J. W. Haywood, Baldwinsville, N. Y.
889,782—Spring Wheel. S. W. Higgins, assignor of one-half to F. H. Farnsworth, Detroit, Mich.
889,688—Fastening Device for Wagon End Gates and the like. J. Huffman, Omaha, Neb.
889,691—Wheel Retainer and Attachment Support. F. W. Lechner, Wenona, Ill.
889,251—Running Gear for Vehicles. V. Martin, Hopkinsville, Ky.
889,805—Attachment for Vehicle Wheels. C. C. Phelps, Salt Lake City, Utah.
889,720—Vehicle Brake. T. Robino, Hazleton, Pa.
889,402—Carriage and Automobile Body. M. J. Rothschild, assignor to Rothschild & Company, New York, N. Y.
889,722—Safety Attachment for Whiffletrees. H. L. Rued, Butterfield, Me.
889,263—Pneumatic Tire for Vehicle Wheels. R. P. Scott, Cadiz, Ohio.
890,400—Lubricator for Vehicles. G. Barthold, Jr., Steubenville, Ohio.
890,016—Ball Bearing Axle. F. L. Bryant, Chicago, Ill.
889,909—Buggy Top. J. C. Craig, Kinmount, Ontario, assignor of two-thirds to J. J. Kenyon, Lindsay, and J. T. Laking, Haliburton, Canada.
890,223—Spring Wheel. B. F. Diffenbaugh, Creston, Iowa.
890,278—Detachable Pole for Vehicles. M. Hirsch and C. Greil, Reid, Austria-Hungary.
890,056—Wagon Box. H. J. Hopkins, Crystal Springs, Kan.
890,082—Whiffletree Hook. L. Morgan, assignor of one-half to J. J. Warnock, Manchester, Okla.
890,166—Vehicle Pole. C. W. Needles, Atlantic, Iowa.
890,167—Vehicle Pole. C. W. Needles, Atlantic, Iowa.
889,960—Running Gear for Vehicles. I. E. Palmer, Middletown, Conn.
890,098—Bolster Stake for Sleighs. W. F. Roettger, Ronneby, Minn.
890,318—Dumping Wagon. H. H. Walsh, Beaumont, Texas.
890,481—Tongue Plate. E. M. Winslow, Iowa Falls, Iowa.
890,004—Spoke for Vehicle Wheels. J. C. Wise, Hillsboro, Iowa.
891,027—Extension Dashboard for Vehicles. J. E. Albright, West Newton, Pa.
890,752—Tire Setter. D. Ballenger, Carthage, assignor to B. Ballenger, Lamar, and J. N. Burns, W. S. Morrow and W. P. Burns, Golden City, Mo.
891,035—Thill Coupling. C. C. Bradley, Syracuse, N. Y.
891,206—Equalized Oscillating Gear for Road Vehicles. L. H. Campbell, assignor of one-half to A. A. Lindsey, trustee, Portland, Oregon.
890,624—Vehicle Tire. E. L. Easlick, assignor to Goodyear Tire & Rubber Company, Akron, Ohio.
891,215—Wagon Standard. A. H. Harshbarger, Bement, Ill.
891,168—Vehicle Spring. N. Hee, Baldwinsville, N. Y.
891,169—Spring Tire. B. Hilger, assignor to F. J. C. Krahn and M. Bautsch, Elgin, Ill.
891,172—Wheel Rim. E. Hopkinson, East Orange, N. J., and T. Midgley, Hartford, Conn., said Hopkinson assignor to Hartford Rubber Works Company, Hartford, Conn.
890,774—Vehicle Brake Shoe. T. L. Knapp, Woodstock, Ill.
891,087—Draft Equalizer. H. L. Litchfield and E. C. Litchfield, assignors to Litchfield Manufacturing Company, Waterloo, Iowa.
890,671—Pneumatic Wheel for Vehicles. B. J. Macaulay, Eastbourne, and J. A. F. Hall, Hampden Park, near Eastbourne, England.
891,092—Ball Bearing Vehicle Axle. J. D. McIntosh, Alexandria, Ont., Can.
891,186—Thill Coupling. H. Parr, Canton, Ohio, assignor of one-half to C. McGranahan, Chicago, Ill., and E. E. Mack, Canton, Ohio.
890,721—Ball Bearing Wheel. W. Sparks, assignor to George A. McKeel & Company, Limited, Jackson, Mich.
891,118—Carriage Curtain. R. Wall, Detroit, Mich.
891,120—Brake for Vehicles. J. G. Weller, Munhall, Pa.

Copies of above patents may be obtained for fifteen cents each by addressing John A. Saul, solicitor of patents, Fendall Building, Washington, D. C.

HAND-FEED PLANING AND JOINTING MACHINE.

The twenty-four inch hand-feed planing and jointing machine, as shown by the accompanying engraving, is in general use by the leading wood-working shops throughout the world. It is adapted to a wide range of uses and performs the work in a superior manner, more accurately, and effecting an immense saving over hand labor; and it is recommended for straight planing, squaring up, taking out of wind, cornering, chamfering, beveling, and making glue joints. It is suited to all the general requirements of wagon, carriage, and agricultural implement manufacturers.

The machine, which is of modern design, strong, well supported, positive and easy of adjustment, with heavy bearings and true surfaces, is built by the Defiance Machine Works, Defiance, Ohio. The frame is heavy and substantial, cast in one piece, very stiff and durable, properly supporting the tables and keeping them in alignment. Chips and dust from the cylinder are discharged at the back end of the machine through a chamber cored through the frame.



The tables measure seven feet from out to out, an exceedingly desirable length for fine planing. They are fitted to the frame and slide in planed and scraped angular ways, and are provided with gibs to take up for wear. A hand wheel and screw at either end of the machine are used for adjusting the tables horizontally, to regulate the depth of cut. The end of tables at throat form an opening 1¼ in. wide when the machine is set for ordinary planing, at all positions keeping outside the radius of the cutting line of the knives. A finishing cut is removed from the top surface and sides of the tables after they are fitted to the frame, making them absolutely true and parallel with each other. A shield surrounds the boxes, preventing the admission of dust to the bearings and the operator from coming in contact with the oil. An improved adjustable fence accompanies each machine, which is adjustable over the whole surface of the table, and can be instantly set at an angle while the machine is in motion.

Digitized by Google

OBITUARY

Aaron T. Demarest.

Aaron T. Demarest, president of the firm of A. T. Demarest & Co., carriage manufacturers of Thirty-third street and Fifth avenue, New York City, died July 13 at Greenwich, Conn., where he made his home in the summer. He had been ill for some weeks of ptomaine poisoning contracted at a clambake which he attended during the commencement exercises at Yale, where his grandson was graduated. He was improving when he was stricken with paralysis.

Mr. Demarest was born in Nyack in 1841, and came to this city in 1860. He entered the employ of Van Horne & Co., dealers in carriage goods, and a few years later opened a place of his own. His firm had lately gone largely into the manufacture of automobile bodies.

Mr. Demarest's wife died four years ago, and he is survived by his brother, William R., two sons and a daughter. He lived in New York City during the winter months.

John B. Judkins.

In our last issue we simply announced the death of John B. Judkins, of Merrimac, Mass., being unable to publish a detailed sketch of his life at that time.

Mr. Judkin was very prominent in the carriage trade many years ago, and was probably the oldest and last of the old school of carriage builders, who conducted business in the "fifties," and during the war. He was one of the founders of the Carriage Builders' National Association and ex-vice-president, and in its early days was deeply interested in its welfare, aiding its organization in the East.

John B. Judkins was born in Freedom, N. H., in 1835, thus having attained the age of 73 years. His paternal grandfather



John B. Judkins.

was commissioned major in the Continental army and fought during the Revolution.

In 1852 deceased went to Merrimac when seventeen years of age and entered upon an apprenticeship of five years as a carriage trimmer. He began the manufacture of carriages in Merrimac in 1857. For forty years this business grew under the supervision of Mr. Judkins until the product of the concern became known all over New England. The company was incorporated in 1891 with J. B. Judkins, president; F. B. Judkins, treasurer, and C. H. Judkins, secretary.

During the early nineties Mr. Judkins' health failed and he went abroad. He returned greatly improved in health but did not resume business cares. He was for years a director of his local national bank and vice-president of the savings bank. In 1884 he was elected to represent the people in the State legislature and gave excellent service.

Mr. Judkins' death removes one who was esteemed by all. Among business associates he was highly respected for his ability and integrity. The pall bearers at the funeral consisted of Charles H. Nichols, Melville M. Cunningham, Frank Le Favor, Horace Hoyt, John Brady and John Sheehan, all of whom had been in his employ over thirty years.

Thomas H. Brown.

Thomas H. Brown, a once well known vehicle manufacturer of Milwaukee, Wis., and late mayor of that city, died recently. He was sixty-nine years of age, and his illness was of only twenty-four hours' duration. Besides being mayor, he occupied many other positions under the city government at different times.

William R. Cahoon, Jr.

William R. Cahoon, Jr., a carriage manufacturer, of Dover, Del., died recently of heart disease following an acute attack of indigestion. A widow and two daughters survive.

HANDSOME BOLT AND NUT CATALOGUE.

The finest catalogue and price list on bolts and nuts, exclusively, to reach our office came to hand recently. The book, which is from the Russell, Birdsall & Ward Bolt & Nut Co., Port Chester, N. Y., contains many full page half-tone illustrations of nuts and bolts in groups and singly, of leading standard varieties, besides plates of the other products of this house.

The firm produces bolts and nuts of any conceivable style to be used for any purpose. They will also manufacture such articles to order from tracings to meet individual requirements.

Carriage, wagon and automobile manufacturers should write for a copy of this catalogue which, no doubt, would be cheerfully sent.

SOLID RUBBER TIRES BEING INTRODUCED IN DENMARK.

Consul-General Frank R. Mowrer, in reporting that the use of solid rubber tires on carriages is gradually increasing in Copenhagen, gives the following trade particulars:

The tires are supplied on most of the best grades of carriages now being sold and Danish dealers state there is a tendency to use them on traps and road wagons. The introduction of automobile taximeter cabs, which are equipped with pneumatic tires, has improved the public horse cab and already on some of these solid rubber tires are used.

The principal supply of solid rubber tires is now imported from Great Britain. American-made tires have been tried in this market, but it is stated they are too soft and while relatively cheaper at the factory than British tires, the transportation charges are considerable. To make purchases in the United States at best advantage it is necessary to place large orders and the present demand does not require a large stock to be kept on hand. In some instances the long transit has made it impracticable to order certain styles and sizes of tires for immediate use.

German tires are considered too heavy and also too expensive. French tires are also dearer than British tires. The approximate value of tires sold annually is $13,400. To secure a portion of this trade it is suggested that American manufacturers of solid rubber tires correspond with dealers, whose names and addresses can be obtained from the Bureau of Manufactures, Washington, D. C. Names of similar dealers in other cities may also be secured.

Digitized by Google

Trade News From Near and Far

BUSINESS CHANGES.

Peebles & Chamberlain have sold their vehicle and implement business in Athena, Ore., to C. D. Barrett & Co.

Ole Nelson has purchased the vehicle and implement business of Gross & Johnson, in Leshara, Neb.

Bowen Bros. have purchased the hardware and buggy business of O. M. Elliott & Co., in Lenora, Kan.

W. H. Meyer has succeeded J. F. Joss in the vehicle and hardware business in Fairview, Kan.

R. A. Campbell has purchased the hardware and vehicle business of James R. Adams in Lufkin, Texas.

J. N. Guernhart has purchased the vehicle and implement business of C. H. Duckworth, in Wymore, Neb.

Johnson & Schmidt have sold out their stock of vehicles, etc., in Concord, Neb., to Chas. Allen, of Page.

Olaf Pearson has sold his stock of vehicles, etc., in Swea City, Ia., to Warburton Bros.

McGray & Rose have succeeded O. F. McGray in the hardware and buggy business in Douglas, N. D.

J. H. Rust has purchased the vehicle and implement business of A. R. Bradfield, in Altamont, Kan.

C. W. Kelley, of White City, Kan., has purchased the buggy and implement business of D. F. Irwin, in Chapman, Kan.

Hanson & Olson have succeeded Hanson & Manning, in Sheldon, N. D.

S. P. Healy has sold his stock of vehicles, etc., in Oto, Ia., to the Knapp-Spencer Co., of Sioux City.

C. N. Mackie has purchased the interest of W. E. White in the vehicle and implement business of Wright, White & Co., in Newberg, Ore.

S. R. Lovitt has sold his hardware and buggy business in Colby, Kan., to G. R. Werner.

O. H. Davis has disposed of his implement and vehicle business in Madelia, Minn., to M. J. Wentz.

Carl L. Hinman has purchased the buggy and hardware business of S. G. Hughes, in Forest Grove, Ore.

Henry Beaudry has sold his stock of vehicles, etc., in Rathdrum, Wash., to C. W. Royce.

C. T. Buckner, proprietor of the C. T. Buckner Carriage Company, Carthage, Mo., has sold his business to Henry Tangner.

The Le Moyne Carriage and Wagon Works, at LeMoyne, Pa., has been purchased by F. N. Watts and C. E. Noye.

Kuhn Bros., carriage and wagon manufacturers in Youngstown, Ohio, have sold their business to J. E. Heck.

NEW FIRMS AND INCORPORATIONS.

J. T. Tunnah, of Aberdeen, Tex., contemplates opening a wagon factory in Little Rock, Ark.

The Symons Dump Wagon Works has been incorporated in Sheridan, Ind., with a capital of $40,000. The directors are W. M. Symons, J. M. Thistlethwaite and J. E. Symons.

Yous & Lower have engaged in the buggy business in Essex, Iowa.

W. S. Wooley has engaged in the vehicle business in Dalton, Neb.

The Lester-Sicard Vehicle Co. has been incorporated in Fort Smith, Ark., with a capital stock of $5,000.

Caldwell & Hainkel have engaged in the vehicle and harness business in Wichita, Kan.

J. H. Gilbert & Son have engaged in the vehicle business in Greeley, Colo.

The Southern Mercantile Co. has been incorporated in Welsh, La., with a capital of $30,000, and will handle vehicles and other lines.

The Rocky Hardware Co., of Rocky, Okla., is adding a line of vehicles, etc.

Brunns Carriage Manufacturing Co. has been incorporated in Buffalo, N. Y., to manufacture wagons, carriages, automobiles, eac.; capital, $100,000. Incorporators: Henry Brunn, Eugene W. Harrington, Frank A. James, Buffalo.

The Joquillard Wagon Works, of Henderson, Ky., has increased its capital stock from $200,000 to $300,000.

The Edward Hart Co. has been incorporated in Gallup, N. M., with a capital stock of $100,000, and will succeed Edward Hart in the implement, vehicle and hardware business.

W. N. White is opening a new stock of buggies, etc., in Ponca, Neb.

The J. M. Selzer Carriage & Business Wagon Mfg. Co. has been incorporated by J. M. Selzer and others of St. Louis, Mo.

R. W. Rochford and O. H. Lent are opening a stock of vehicles, etc., in Arkansas City, Kan.

The Frankfort Carriage Manufacturing Company, of Frankfort, Ind., has been incorporated with a capital of $15,000, and Lou M. Morris, John N. Dorner, George Dorner and Grover E. Frankenfield are named as directors.

The Novelty Carriage Company, of Wilmington, Del., has been incorporated with a capital of $50,000. The incorporators are John A. Cranston, Joseph B. Foster and William J. W. Hance.

MISCELLANEOUS.

Cahill & Co., carriage manufacturers in Wilmington, Del., have moved into their new factory building.

The factory of the John W. Mount Carriage Company, Red Bank, N. J., which was recently destroyed by fire, is being rebuilt.

James W. Renwick, Inc., of New York City, has made an assignment.

George H. Stehling, manufacturer of buggies, wagons, etc., at Milwaukee, Wis., is enlarging his plant.

FIRES.

Mathes & Son's wagon shop, Anderson, Ind., was slightly damaged by fire recently.

The Palmer & Kaiser carriage factory at Lima, Ohio, burned recently. The loss included a big stock of unfinished and finished vehicles, including two automobiles.

Fire in the wagon factory of Charles Van Buskirk & Son, East Cambridge, Mass., caused a loss of $10,000.

John H. Ray lost 100 carriages in a recent fire at Greenwich, Conn.

FOR SANDY SOILS.

An exchange informs us that a German manufacturer recently turned out an automobile which differs from the ordinary type in the sense that all four wheels are employed for driving and steering. This car was specially designed for the requirements of traffic in South Africa. Much of the country is so sandy that the ordinary automobile would be practically helpless. The entire mechanism of the car is enclosed in dust-proof cases and the bearings are also protected against sand. The wheels are made of pressed steel. The total weight of the car is approximately 6,000 pounds.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

Popularizing the Automobile.

Far-seeing automobile builders have long recognized the fact that there could be no general and wide-spread demand for automobiles as long as prices ranged from $2,000 to $4,000. But for a long time they kept themselves fairly busy meeting the demand from a class of people who could afford to pay that price. Besides the cost of manufacture had not been reduced because of the undeveloped and half-organized condition of the industry.

That period has practically passed. The automobile is practically completed. There are ten people to-day who can afford to own a car which would cost them $1,200 to $1,500 against one who could or would pay from $2,000 to $4,000. To reach this large and growing class of people was the problem. The efforts of a number of large concerns has been in that direction. That they have reached this coveted position is evidenced by the announcements that 1909 makes will be supplied the trade by several firms at these low figures. It is understood that some carriage builders are among the number who have prepared themselves to make this great departure. The assurance is given that these cars will be well built, fine in appearance, and will give satisfaction. They will not be monsters capable of enormous speed, but they will be able to make reasonable family speed and be sound and good machines.

It needs no prophet to tell what sort of a demand will follow such an accomplishment. The day laborer would own an automobile if he could. The harvest awaits. Returning prosperity will furnish additional impulse.

European Trucks.

The interest taken by the German and French Governments in utilizing the automobile in every possible way for war purposes and especially for the annual manouvering of troops has indirectly stimulated European builders to give their attention to the construction of heavy commercial trucks. There does not seem to be the same commercial demand abroad as at home. But types of trucks are being turned out which represent a high degree of ingenuity. Of course, the government conception of an automobile is endurance, while the commercial idea is economy. The present formidable trucks of European shops represent both ideas.

Our American builders might profit by a close study of these European semi-military wagons. They are in very common use in the armies and they do everything required of them.

What the French Are Doing.

The French government, with its keen instinct for the best possible roads, is tearing up its old block roads in the vicinity of Paris and is putting down solid concrete foundations. They are paving this with smooth, closely fitting granite blocks. They are also tarring the roads to the smaller cities and towns to make travel easy and comfortable. Their long, dustless boulevards are inviting, and every element of discomfort is removed.

The more utilitarian features are not overlooked. Cars of 10 h. p., 4 cylinders, are now drawing 200 tons of canal boats at the rate of five to six miles an hour, to the great cheapening of the cost of transportation over horse power. The hope of the advocates of this power is to substitute automobiles for horses on the entire cobweb of canals, which gives France the most complete system of inland transportation in the world. Interest is to be intensified by a world congress on good roads, which is to be held in Paris in October and to continue seven days. All governments have been asked to send representatives.

Summary of Conditions.

From the business or commercial side of the automobile situation, if conditions are not wholly exaggerated by manufacturers, managers of houses and branch agencies, there is nothing but encouragement. Some go so far as to assert that the depression has had no influence on demand or production, that is, of an unfavorable nature. Certainly a large and apparently increasing volume of business is engaging the manufacturing and distributing facilities. That the business of building automobiles is settling down to something like permanent conditions is evidenced by the fact that larger number of automobiles of like pattern are now being manufactured. There are many indications that the trade is at last emerging from its experimental stage. The best mechanical features of construction are being established, classified and systematized.

Another Advantage.

The application of the oxy-acetyline flame to the welding of metal parts used in automobile and other construction is a pronounced step in advance. The intensity of the heat, 6,300 degrees, is so far above the melting point of most metals as to make it unapproachable. The need of just such a flame has been recognized. It is something more than mere welding. The metals affected lose their separate identities and form practically a new metal. It can be used for almost every metal construction purpose encountered in shop practice—for auto frames and engine parts. By its application rivets can be largely dispensed with and this weakening factor in construction eliminated. The remarkable consummation is that a machine made up as now of a number of separate parts not securely united can be made into one solid piece. Parts now attached by being pinned, brazed, keyed or screwed can be made solid and free from these weakening devices. Parts built with mild steel, but which would be all the stronger with high carbon steel, can be made what they should be by this

Digitized by Google

welding method. Further, brass parts, nickel, steel or cast iron valve heads can be attached to carbon steel by this means.

It is unnecessary to follow out in detail all the possibilities of this intense flame. It can cut through metal in an extremely narrow path, leaving only redness a half inch to either side. Its full significance is not yet comprehended.

The defect of modern engineering from the construction of immense cantilever bridges and great steam boilers is the necessity of rivets, nuts, screws and braces to hold parts together. Parts are the first to give way. When there are no parts, what gives way? This flame is calculated to annihilate parts, crevices, adjustments and all those mechanical attachments which constitute the complications of machinery.

This intense flame will not only be of vast service in the automobile plant, but in all shops where the junction of parts is the basis of construction. There are three devitalizing agencies always at work in all construction involving iron and steel, viz., elasticity, crystalization and rotation of joints. The elimination of joints removes one cause of deterioration, and in so doing reduces the force of the remaining two.

The manufacture of light crank shafts from pressed steel in two separate halves, and then forced together by hydraulic and other means, is a step in advance in the production of exceptionally strong and practically unbreakable shafts. The line of union between the two halves arrests the momentum of force and practically nullifies or destroys it, thus increasing the strength of the shaft. This is only one of the recently developed possibilities of pressed steel. The German engineers who are developing this feature have opened up a field of great possibilities.

Self-Propelled Buggies.

The success which has attended the building of a buggy driven by power has attracted the attention of a good many vehicle builders. Considerable shop or experimental work is being done with a view of producing a popular, cheap, taking and enduring self-propelled buggy. One of the latest bidders for this demand has two cylinders, and a two-cycle motor, the cylinders being placed horizontally under the rear of the body. In appearance it approaches the rich Victoria. In action it meets every conception of comfort and elegance. In point of cost it is as low as the present state of auto building permits. This leads to the recognition of a latent and enormous demand for a buggy that comes within the reach of persons of moderate circumstances. The problem is the cost. The difference between $65 or $100 and $1,200 is a serious difference, but it is not sufficient to deter some builders from attempting to build up a big business in it.

Thinking Out New Methods.

Some very optimistic persons prefer to see grand possibilities for the remarkable cheapness of the automobile through what they term the stamping out process; that is, when presses will be largely used to stamp out many of the various parts which enter into the construction of an automobile. Those who are intimately familiar with the process of construction will not attach much importance to possible economics in this direction. Aluminum parts may be made by more economical processes but the general handwork of the automobile will probably long remain within the province of the specialist.

Some carriage builders who are entering the automobile industry with promise of great ultimate success are endeavoring with some gratifying indications, to apply carriage part manufacture to automobile construction. The possibilities are more limited than in carriage construction, but the zeal with which some builders are applying themselves to this object warrants some anticipations that automobile construction will be measurably simplified.

WANTS AGENCY FOR AMERICAN GOODS.

A large English carriage and automobile supply house, whose address will be given upon application to this office, desires to represent American manufacturers in their line and make their wants known in the following words:

"You may possibly have amongst your advertisers firms manufacturing motor or carriage goods, who wish to be represented in Great Britain, if so, perhaps you could put me into communication with them. I am open to represent any manufacturer of American goods, on a commission basis. I have a good connection in the trade and have offices and warehouse in London, and have recently opened another in Birmingham, besides which I have three travelers on the road. If you have anyone on your books requiring an agent I should esteem it a favor if you would put me into communication with them. I might add that I have a stand at the forthcoming Olympia Show, which opens November 13."

MOTOR BUGGY AN IDEAL WESTERN CAR.

A Review of the Development of the Touring Car.—Advantages of the High-Wheel Motor Buggy.

Pioneer American automobile manufacturers, lacking any other design to follow, used the conventional horse-drawn vehicle types in building their bodies. The buggy, the phaeton and, for more pretentious conveyances, the surrey were the popular "models" of those early days. So closely was the design of horse vehicles followed that in one of the first automobile magazines a picture of a well-known car is shown with a regulation whip-socket adorning a regulation dashboard. It is not known whether it was placed there through oversight or whether it was intended for the accommodation of a one-horsepower "accelerator."

Prior to the advent of the "motor-forward-under-the-hood" models the engine was invariably placed under the body—a most inaccessible and inconvenient location when anything went wrong—and this arrangement, with the dash in front, added to the similarity in appearance to the horse-drawn carriage.

The first step towards a more distinctive type of body was the "rear entrance tonneau"—a most inconvenient means of entrance and exit. This stage, although an important one in the evolution of the automobile body, was soon followed by a reversion to the "side-entrance" design such as prevails to-day. The disadvantages of a rear entrance are very apparent and it is probable that the side entrance has come to stay.

The running gear of the early productions followed the horse type as closely as did the body, and the high wheel with solid or cushion tires lasted through the first years of experimenting. The inevitable change to low wheels and pneumatic tires, however, took place in the automobile just as it did in the bicycle. The improvement of tires for automobile use was necessarily slow, and even to-day the tires are a source of considerable trouble and expense, says the Aetna. Once tried it is probable pneumatic tires never will be dropped, for without them riding is uncomfortable if not actually impossible with the large and heavy cars, on account of the tremendous vibration and the shock from striking even small obstacles at high speed.

The first low wheels built followed the bicycle design in that they had wire spokes. As cars were made heavier and more powerful it became necessary to have stronger wheels, and the

Digitized by Google

introduction of the "artillery wheel," as it is called, followed as a matter of course.

The accepted type of automobile to-day, with an exception which will be described later, differs from the early type and from the horse vehicle in the following details: It is built out in front of the "dash" to accommodate the motor, radiator, etc.; it has low wheels and pneumatic tires instead of high wheel and solid tire; it has a tonneau instead of an open surrey rear seat, and commonly a divided front seat.

Such an automobile is without doubt entirely satisfactory (with such improvements as can be made in tires, etc.,) to the man who can afford one and who uses it on ordinary good roads. There is, however, a class of people who cannot afford the initial cost and the subsequent upkeep of such a car, and a class of roads where such a car is not entirely practical; and a demand for a cheaper, simpler car, with high wheels and solid tires for use on rough and sandy roads, is now being met by many western manufacturers.

There is no doubt that a high wheel will ride over uneven roads with less power and shock than a low wheel. A solid, narrow tire will cut through deep mud, sand or snow better than a wide tire. There are roads with obstructions so high that a goodly "clearance" is necessary. These conditions call for a special type of automobile, and the "automobile buggy," or "buggy about" as it is sometimes called, seems to meet the requirements.

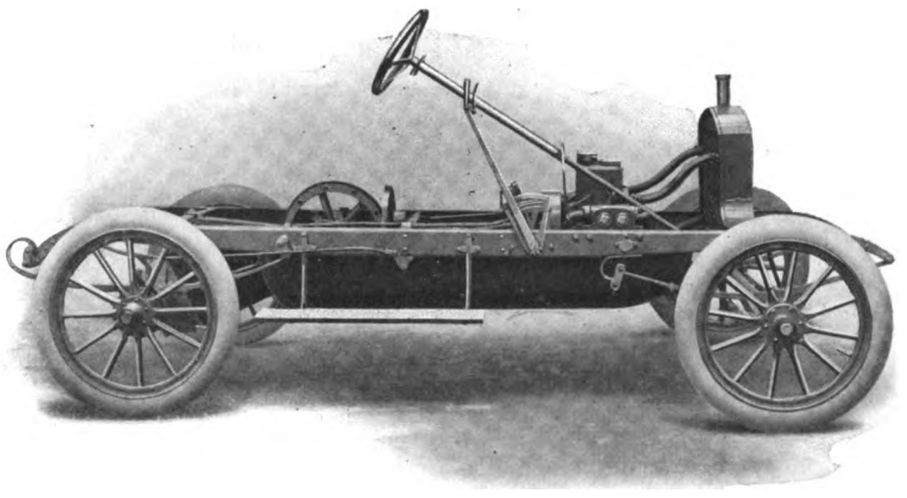
Not only does such a car meet the conditions of rough roads better, but it also can be built cheaper on account of its compactness, simplicity and lower cost of tires. It is small wonder then that there are no less than fifteen large manufacturers building these in quantities and selling them as fast as they can produce them.

The principal demand for them is in the West, at present, and they are chiefly being manufactured there. As a vehicle for farmers they are nearly ideal, and the demand for them from that source is increasing remarkably.

They are as yet but little known in the East, for the road conditions here are better and the necessity for them on that account is not felt. Their low cost, however, is bound to appeal sooner or later to a large class who cannot afford anything more elaborate, and when the newness and somewhat crude appearance wears off they will, without doubt, be sold in large numbers in the eastern states.

At present they appear to be old and antiquated and many people probably hesitate to buy them on that account. It is true that they are a reversion to an old type, and building them seems at first like a long step backward. When, however, it is considered that they are really a reversion to a type of horse-drawn vehicle that has been used, and found satisfactory for years, and that they meet certain conditions better than their more elaborate and pretentious brother, the modern touring car, they are looked upon with more respect.

They have a place to fill and they fill it admirably. One manufacturer describes his real product as "the first real successor to the horse." If they succeed the horse ever so little every motorist and progressive citizen should be grateful.



Chassis of the "Lambert" Car. Shown Complete on page 185.

PLANNING A PLANT FOR DENATURED ALCOHOL.

The use of alcohol as a motor fuel is engaging the attention of many different interests at the present time, both those connected with its production and use.

An individual effort in the work of development is reported from Effingham, Ill., a town situated on the old national road, where the formation of a company to establish a plant for the production of denatured alcohol is being planned. Sorghum is the crop selected for use as a raw material. It is easily grown in the locality, gives a large yield of alcohol, and the foliage, the fibre and the seed are all available sources of profit.

In the locality tomatoes are grown extensively for the market, and it is proposed to use those unsuitable for canning or household use as raw material also. The plan is to interest farmers in the vicinity, as a crop of ten thousand tons of sorghum could be raised on about five hundred acres of land. The need for hauling about this heavy crop to the plant would interest the farmers in the condition of the roads. With the original plant in successful operation the promoter believes it will be possible to establish a chain of similar plants along the national highway.

In Great Britain the situation is complicated by the existence of a trust which has raised the price of denatured alcohol and so almost counteracted the effect of the law passed in 1906 reducing the government tax on the spirit. A concession of ten cents a gallon was made by the government, which the action of the trust has effectively reduced to two cents a gallon.

TO GO WITH THEM.

"What makes Jones so economical these days?"

"Some one gave him a pair of goggles, and now he's saving up for an automobile."—Lippincott's.

Digitized by Google

WILL MAKE MOTOR BUGGIES.

The Blakesley Buggy Co., St. Louis, Mo., has secured the plant in Kansas City, Mo., formerly occupied by the Kansas City Motor Car Co., and will shortly begin the manufacture of motor buggies and other horseless pleasure vehicles. The property includes five acres of ground and two large modern brick buildings.

TWO NEW MOTOR BUGGY CONCERNS.

An automobile of the high wheel type has been put upon the market by the Lincoln Motor Vehicle Co., Lincoln, Ill. The manufacturers have put forth their best efforts to construct a neat, stylish, simple, reliable and inexpensive car.

The Eureka Motor Buggy Mfg. Co., of St. Louis, Mo., has been incorporated to manufacture and deal in motor vehicles, etc. Capital stock, one-half paid, $50,000.

CORRECTION.

Because of the similarity of two plates appearing on page 147 of the illustrated automobile section in July issue of this journal, an error was made by misplacing the cuts.

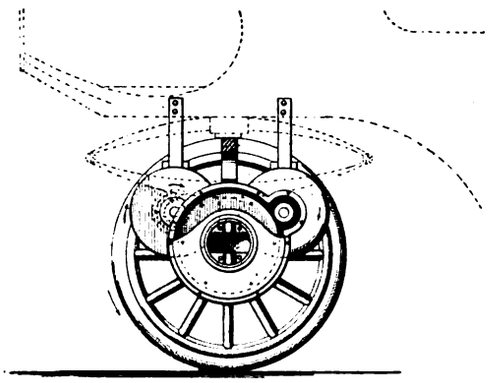
The car appearing on top of page is built by the Cameron Car Co., while the lower one is manufactured by the Overland Auto. Co.

NEW DRIVING MECHANISM FOR MOTOR VEHICLES.

Last month there was granted to William H. Douglas, of Belleville, N. J., a patent on a new motor driving mechanism, which he has assigned to Healey & Co., of New York.

The object of the invention is to provide a new and improved driving mechanism for motor vehicles, arranged to drive traction wheels independently from different motors, to allow yielding of the vehicle body relative to either traction wheel, without disturbing or affecting the independent driving mechanisms for the traction wheels. A practical embodiment of the invention is represented in the accompanying drawing.

The body of the motor vehicle is mounted on springs supported on the main axle, having vertically disposed pivots for



stub axles to turn on, the said stub axles being connected with each other by a link and being controlled by the usual steering gear of the motor vehicle, and on the said stub axles are mounted to turn the front or traction wheels.

Two motors of any approved construction are suspended by brackets from the vehicle body, and the said motors serve to drive the traction wheels, independently one of the other, by mechanisms alike in construction.

On the shaft of each motor is secured a pinion in mesh with a gear wheel, having its shaft journaled in a suitable bearing attached to the corresponding motor. A casing supported by the bearing incloses and protects the gear wheel and the pinion. The hub of the gear wheel is connected by a connecting shaft with the wheel shaft, on which the corresponding traction wheel is secured, the said connecting shaft being connected by a universal joint with the said hub and by a universal joint with the inner cup-shaped head of the shaft.

The connecting shaft is made in two sections, telescoping one in the other, one having a head provided with a longitudinally extending slots, engaged by friction rollers, journaled on studs, held on a shaft section. Thus by the arrangement described, the sections are free to slide or telescope one on the other, and at the same time the sections turn in unison.

HOLSMAN RUNABOUT.

Illustrated on page 186.

One of the earliest—if not the first—to engage in the manufacture of high-wheel motor-driven vehicles was the Holsman Automobile Company of Chicago, Ill. They saw the need of an automobile which should be low in price and serviceable and immediately set to work to build the high-wheel variety.

These cars which were, when first seen, viewed with astonishment, are now being built by scores of manufacturers in the West, and others are continually entering into that field of manufacture. Many carriage builders have also launched in the motor buggy business placing upon the market a variety of styles among which is also included the surrey.

The transmission of the Holsman car consists of a moveable power shaft suspended on hangers by roller bearings and revolved in a forward direction. This shaft is provided with two deep grooved pulleys at each end, the larger one engaging, by a specially made, flexible, steel transmission cable, a corresponding pulley attached to the spokes of both rear wheels to turn them forward; the smaller one, a friction pulley adapted to engage the tire of the rear wheels, to reverse them.

The power shaft is connected to a ratchet brake lever within easy reach of the river, so that by setting the lever back the shaft is moved forward, the cables are tightened in the revolving grooved pulleys and the vehicle starts forward. By setting the lever forward the shaft is moved backward, the cables are loosened and the power is disengaged positively and without chance of error, as may happen with a sticking clutch, and at the same time and by the same motion the brake is set. By releasing a catch and setting the lever further forward, the brake is released and the friction pulleys are at once, positively and without chance of an error, applied to the wheels, causing them to reverse.

Some of the features of the Holsman are: Starts from the seat; gasoline capacity, 5½ gallons; road capacity, about 150 miles; gasoline tank, in back of seat; double spark coil and tool box behind dash within easy reach from top seat without stopping vehicle; batteries in box in front of dash; weight of vehicle without top, 940 pounds; full elliptic springs; wheel base 75 inches, equal to 95-inch wheel base on automobiles having 28-inch wheels; any tread from 56 to 62 inches; body 32 x 77 in; all speed up to 30 miles; Timken roller bearing axles; brass trimmings.

ELIMINATING BACK DRAFTS FROM A WIND SHIELD.

A device has recently been adopted by an English autoist in connection with a wind screen, which is a great improvement, says "Motor," of London, Eng. It consists in the fitting of what may be termed a side wing with a returned edge, thus increasing the total width and widening the path made by the car through the air, so that the return inrush of air to fill the vacuum commences at a point a little further back and more outwards than usual, thus to a certain extent, missing the occupants of the car with the air currents. Upon the question of wind screens generally the writer says: I was out with a friend one day in his car, and, as we were running rather fast down a hill, a small boy threw a stone at us. The boy was not very large, and

Digitized by Google

his power of throwing could not have been very great, but the speed at which the car was traveling gave such an impetus to the stone that it passed completely through the hard felt hat that my friend was wearing at the time, and, luckily, did no more damage than to the hat. I remember at the time making up my mind that I would never ride behind a wind screen of glass, as, had we had one that day, it might have meant blindness for one of us. However, after motoring constantly through all weathers, I found myself face to face with the choice of having to use a wind screen or of having to give up motoring altogether, as the rush of wind affected my eyes rather badly. I tried goggles—half a dozen pairs at least—but I found them horribly uncomfortable, so gave them up, and at last went in for a screen. The screen that I am using has the lower half inclined toward the driver, the upper half vertical and adjustable. At first I experienced a good deal of discomfort from the back draft, but now I have overcome this, practically entirely, by adding a couple of side wings to the upper half of the screen. The wings are made of stout brass, of the same length as the upper half of the screen. width about five inches and slightly curved forward. I made these myself, making a template first in cardboard. I bent the plates over a broomstick with a rawhide mallet, and countersunk the holes for the screw-heads; the entire cost for the pair, including nickel-plating to match the rest of the metal work on the car, was only a few dollars. So much for this idea. Recently, coming home from Birmingham, we were passing through Merstham, when a small boy picked up a stone with the intention of throwing it at the car. I yelled at him and frightened him into dropping the stone, but, remembering my other experience, I am beginning to feel nervous about that glass screen again. I have seen screens made of glass in which is embedded some fine wire netting. This strikes me as being a good idea, as the netting would hold the fragments together. But why is the lower half of a wind screen made of glass at all?

The civilized nations of the world strike 3,000,000 matches every minute of the twenty-four hours. Americans use up 700,000,000,000 a year. Some of the match plants are very large, one on the Pacific coast covering 240 acres, with thirty-two miles of railroad, which supply 200,000 feet of sugar pine and yellow pine logs a day.

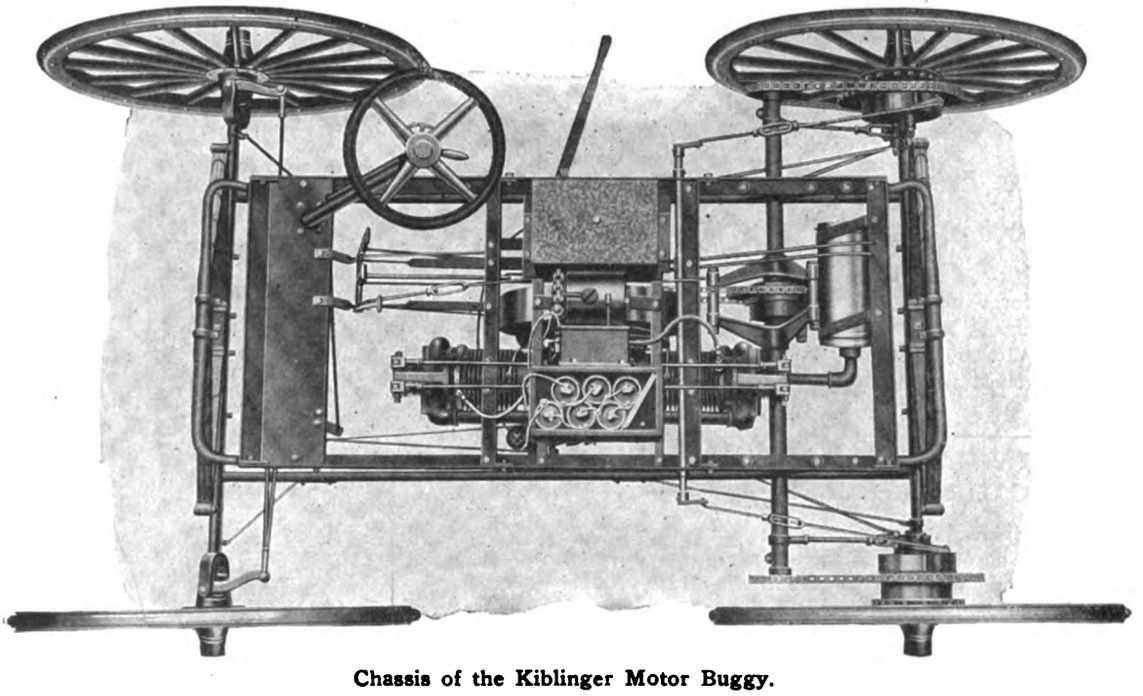
THE KIBLINGER MOTOR BUGGY.

Illustration accompanying.

One of the most successful motor buggies placed upon the market is that manufactured by the W. H. Kiblinger Co., of Auburn, Ind. This company produces two models of chassis. The lighter, which is here illustrated, is designed to carry two persons in a buggy and has 4⅛ bore and 3¾ stroke and will develop twelve horse power. The more powerful chassis has 4¾ bore and 4¾ stroke and is capable of developing sixteen horsepower.

The illustration of chassis accompanying is the smaller type, of which we will give the details of construction besides a separate diagram of the engine. The motor is of the two-cylinder, opposed, four-cycle type.

The cylinders, heads and pistons are all made from a special grey iron and steel compound, which has been found to cut very evenly, assuring the trueness of the cylinders, taking a better finish, improving compression, being more easily lubricated, because of absence of pores, and wearing much longer. The cylinders are cast separate from the crank case. The cylinders, pistons and heads are interchangeable. The valves are accessible for regrinding.



Chassis of the Kiblinger Motor Buggy.

The builder's own patented fly wheel assists in the air cooling. The spokes of this fly wheel are cast in the form of fan blades, with just the proper angle and shape to deliver a maximum blast of air and deliver it to the proper places. This wheel is of large diameter and heavy enough to permit steady running even at low speed.

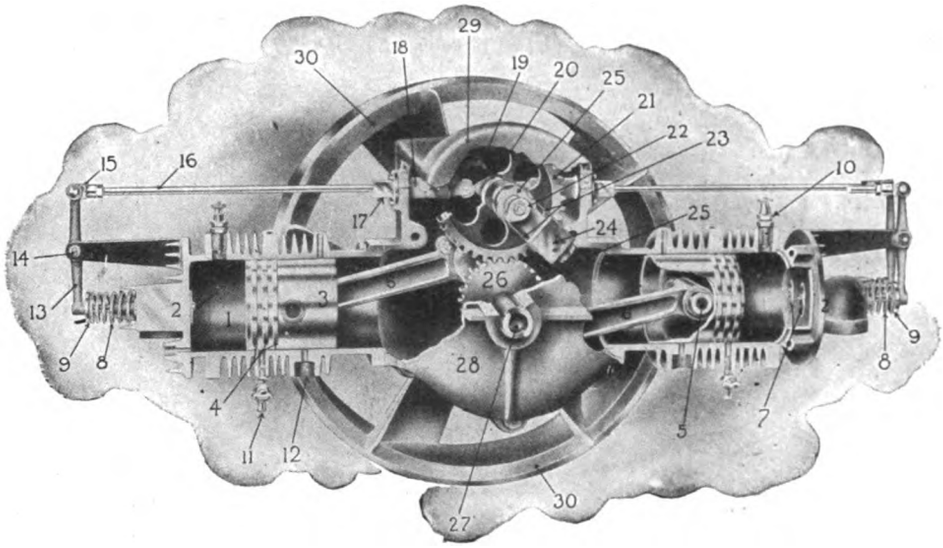
The power is transmitted from the main driving sprocket to the differential by a heavy block chain of approved design. The differential is of the bevel gear type, enclosed in an oil-tight case. The differential shaft runs in four long phosphor-bronze boxes, set in a seamless steel tube and supported at each end by cast steel boxes and on either side of the differential by a cast steel tri-arm support. The drive from differential shaft to rear axle is by means of double side chains to rear wheels. The end supports of the steel tube through which the differential shaft passes is by means of a bearing attached to the rear axle by a radius rod, to relieve the strain of the chain pulling at the ends of the shaft.

The transmission has two speeds forward and one reverse, and so simple any one can operate it. The high speed clutch is of

Digitized by Google

the fibre disk type and of such proportions that the slightest pressure easily drives the vehicle. The slow speed and reverse clutch are operated by foot pedals, the high speed by hand lever.

The frame is constructed of 1½ x 2¼ angle iron. The body hangers are 27½ in. out to out to take a body 29 x 63. The frame work is all suspended from the springs by these hangers. An additional suspension frame extends from side to side, on which the tank, coil, oil feed and batteries are fastened. Two



The Kiblinger Motor.

angle iron cross bars form the motor support. The transmission is attached to the engine by a flange on the end of the transmission shaft, bolted to the hub of the fly wheel. The outer end of this transmission shaft is supported by a bronze bearing. Wheel-base is 69½ in.

STUDEBAKER WILL BUILD HIGH-WHEEL MOTOR VEHICLES.

Having become convinced of the growing demand for the motor buggy type of automobile, the Studebaker interests of South Bend, Ind., have set in motion a part of their vast selling machinery to arrange for the marketing of a new production along this line, which is shortly to make its appearance. Arrangements for the manufacture of the vehicles have but recently been completed, but already an order for a large number of the chassis has been placed with the Speed Changing Pulley Co., of Indianapolis, Ind.

While the order that has already been placed is in a sense only a preliminary, its size may be appreciated when it is known that it was a factor in influencing the removal of the Speed Changing Pulley Co. to Anderson, Ind., this fall.

That so prominent a firm as the big wagon makers should join the ranks of the builders of the high-wheel machine is significant of the growing popularity of this type of vehicle, and is therefore of considerable interest to the trade. The venture into the motor buggy field was only taken after a careful sounding of the market through the agencies of an enormous vehicle business closely in touch with the agricultural communities.

MAGNALIUM.

"Magnalium," which is the title of the latest product of the metallurgist, is an alloy of aluminum and magnesium and is manufactured in Germany. Ninety to ninety-eight per cent. is imported in pigs or ingots for castings or forgings and can be handled by the ordinary foundryman or blacksmith. It forges about like Swedish steel. It is delivered in plates, bars, rods, wire, tubing, etc., and in any form it shows a greater strength than aluminum—in spite of its being lighter—its specific gravity being about 2.5, while that of pure aluminum is 2.64.

"Magnalium" shows the following tensile strength in pounds per square inch: Castings 19,000 to 42,000, forgings 30,000, annealed and hard rolled plates 42,000 to 52,000 respectively, drawn rods 60,000, wire 42,000 to 52,000, tubing 74,000. The various other claims made for it are given below. It can be worked or machined about like brass, giving a smooth surface of silver color. Clean sharp holes can be bored and perfect screw threads can be cut in the metal and the finest files can be used on it successfully. The tool speed is about twice that of aluminum.

It attains and maintains a high polish, resists oxydization, is unaffected by dry or damp air, water, gaseous ammonia, carbonic acid, sulphurate of hydrogen and most organic acids, but very slightly affected by saltpeter or sulphuric acid and more rapidly by alkalies or strong alkaline solutions. It is slightly effected by salt water and should be lacquered where exposed to sea water. This metal is very close grained and can be polished, etched, engraved, pickled, etc., without any trouble, and is very ductile and easily forged, rolled, annealed, drawn, etc.

"Magnalium," unlike aluminum, can be soldered by any ordinary workman with Magnalium solder after a little practice. Its electric and thermal conductivity is fifty-six per cent. of that of pure copper. The melting point is 1185-1250 degrees F., the specific heat 0,2185.

"Magnalium" is extensively used in European markets with good results for airships, automobiles, bicycles, motor-cycles and gasoline engines. Besides being utilized for manufacturing articles used in the army and navy, home and factory, it is also useful for a thousand other purposes.

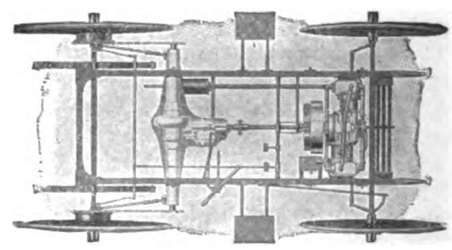
The price of "magnalium," it is claimed, is not so much higher than that of aluminum as to make it more expensive to use, because less "magnalium" is required on account of its greater strength per unit of cross section and lesser unit weight.

RELIABLE DAYTON MOTOR CAR.

Illustrated on page 186.

Illustrations in the Automobile Section of this number present two styles of high-wheel motor vehicles as manufactured by the Reliable Dayton Motor Car Co., of Chicago, Ill., and the plates accompanying represent a plan of the chassis used in these vehicles. One design shows a buggy while the other presents the two seated wagon or surrey.

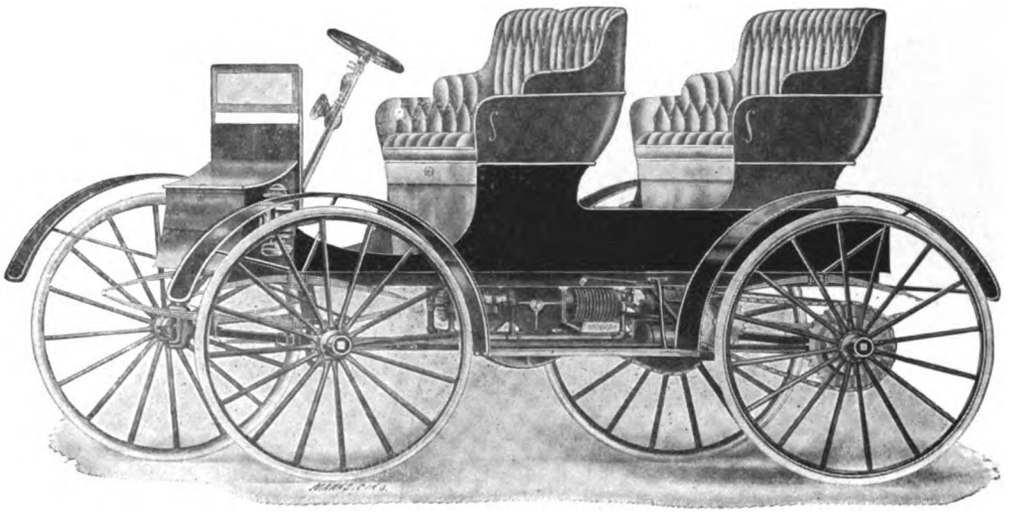
The motor is fifteen horse-power, water-cooled, and is located under the hood at the front. Some of the most important



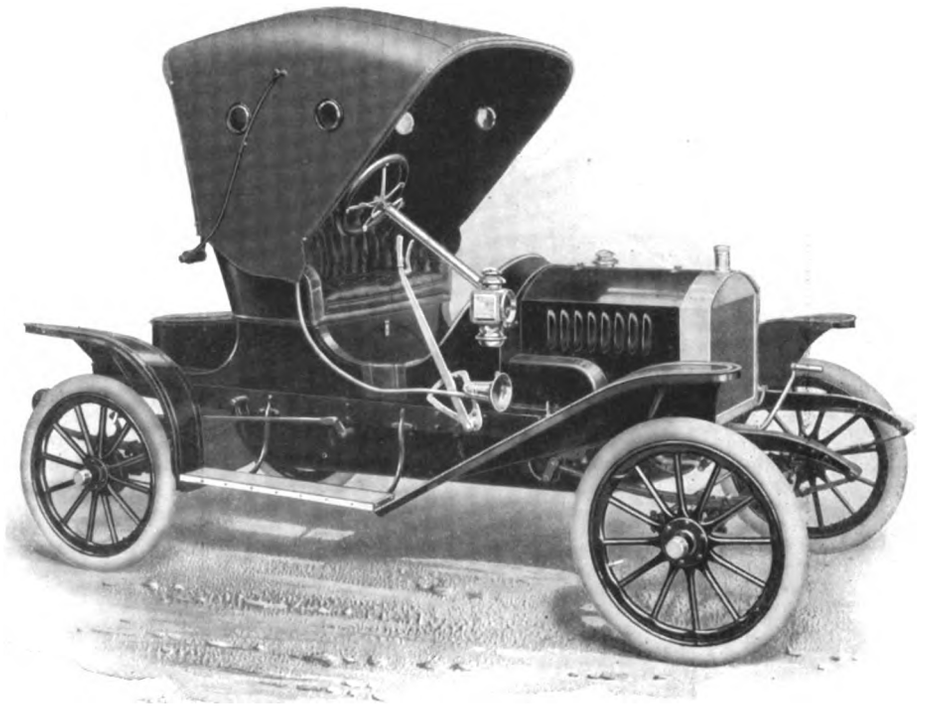
features are: shaft drive to counter shaft; double chain drive to rear wheels; twenty inch road clearance; sliding gear transmission two speeds forward and reverse; direct drive on high gear; transmission, bevel gears, deferential and jack-shaft in one piece dustproof housings; rack and pinion steering device; any speed to twenty-five miles an hour; no ropes, pulleys or belts; solid rubber tires. It is a practical car for year around service.

Digitized by Google

Illustrated Automobile Section, August 1908.



THE "KIBLINGER" CAR, WITH REMOVABLE REAR SEAT.
Built by W. H. Kiblinger Co., Auburn, Ind.
Described on page 183.



THE "LAMBERT" PHYSICIAN'S CAR, WITH LEATHER TOP.
Built by Buckeye Manufacturing Co., Anderson, Ind.
Chassis shown on page 181

Digitized by Google



RELIABLE DAYTON

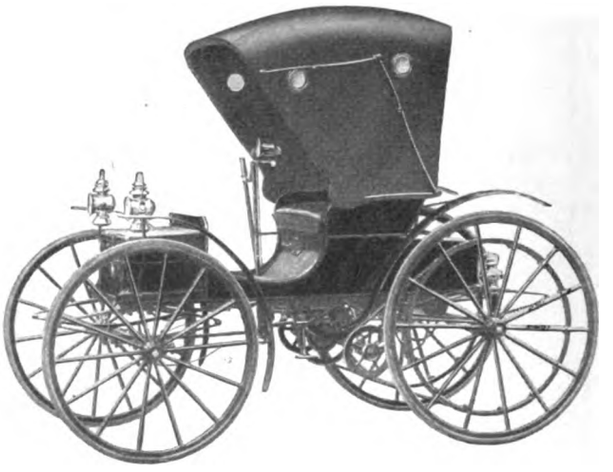
MOTOR BUGGY.

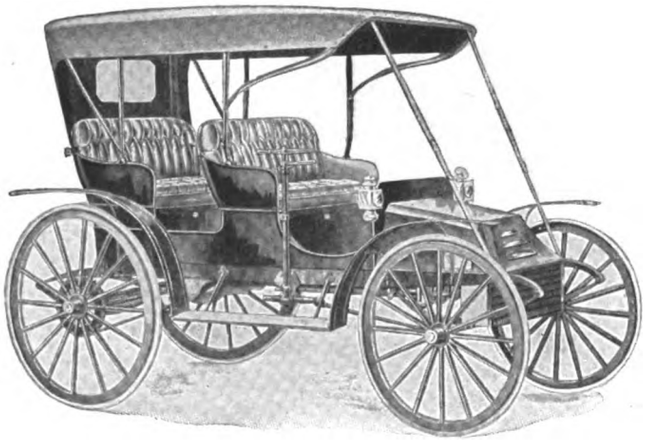
Described on page 184.

HOLSMAN

MOTOR BUGGY.

Described on page 182.





RELIABLE DAYTON

MOTOR SURREY.

Described on page 184.

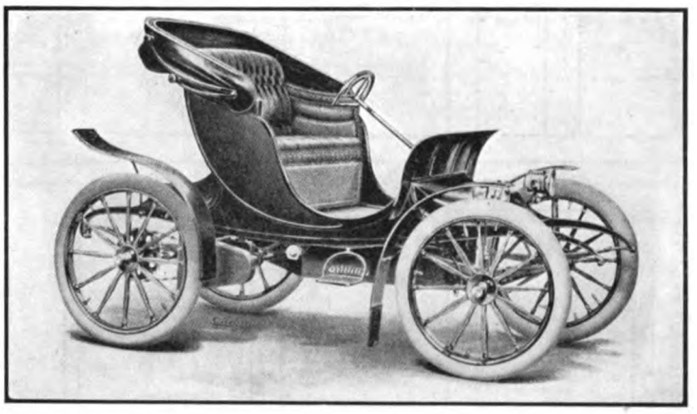
Two and Four Passenger High Wheel Motor Vehicles

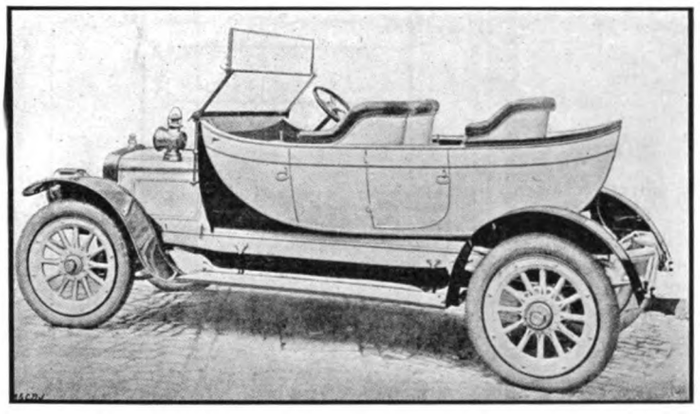
Digitized by Google

ELECTRIC VICTORIA PHAETON.

Built by

S. R. Bailey & Co., Inc., Amesbury, Mass.





BOAT-SHAPED MOTOR CAR.

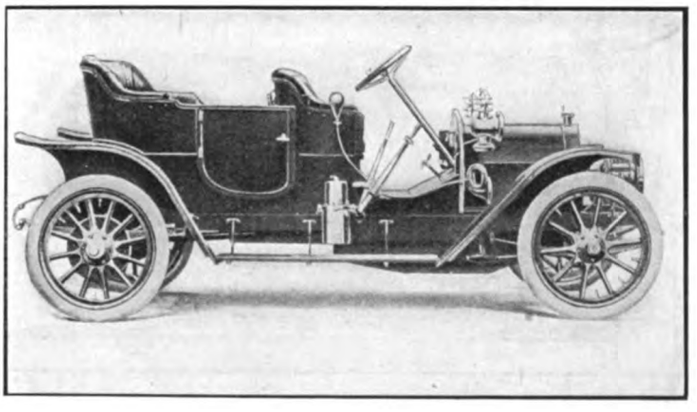
Built Special

By an English Manufacturer.

CHALMERS NEW DETROIT CAR.

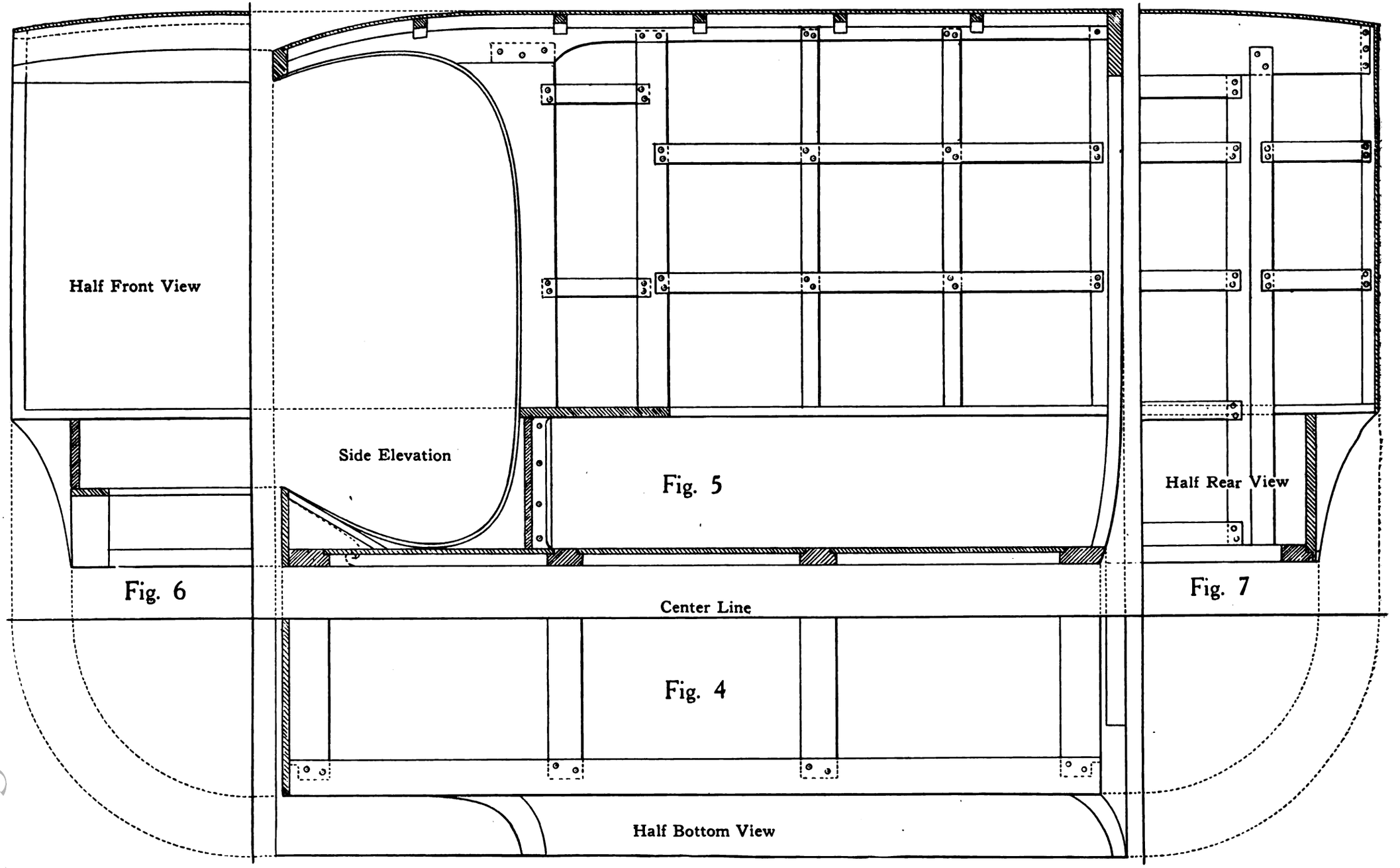
Built by

E. R. Thomas Detroit Co., Detroit, Mich.



New and Unique Electric and Gasoline Motor Cars

Digitized by Google



Scale, one inch to the foot.

Working Draft of Motor-Driven Delivery Car.

Described on opposite page.

Digitized by Google

Body Construction and Finish

DESCRIPTION OF WORKING DRAFT OF MOTOR-DRIVEN DELIVERY CAR.

Drawings accompanying and on preceding page.

The progress of the motor car as a carriage of luxury and usefulness has been far beyond the dreams of the average man in the trade.

Coach makers did not reckon upon its shifting the sands of vehicular commerce in such a drastic way as has been experienced, nor that it would elbow the horse-drawn carriage into a temporary oblivion, and so, through lack of capital, hold in perilous check the output of the carriage building industry throughout the world.

Though all this has been experienced as a lull in the storm of attack, still the motor carriage has come to the trade as a friend instead of an enemy.

It has quickened the resourcefulness of the most creative manufacturing members of the craft, and has called into being the latent genius in the trade to meet the new formations demanded in design and by necessity. And it is gratifying to know that the trade has risen to the occasion as one man, and that now the motor carriage building and road carriage building are carried on in manufacture side by side.

The problem of the strictly carriage side of the motor car having been solved, the commercial side of the vehicle is now developing with rapid strides to a wide supply of trades, where it can be used to a considerable advantage over the horse-drawn vehicles, and is thus working its way to a firm position in catering to the light and fancy trades.

The working drawing shown herewith provides a nicely designed light van, suitable for parcles delivery, express or other light trades requirements. The body is very roomy and well adapted to all the purposes that a fancy trades vehicle is used for.

The construction is very elementary, being simple mortise and half lap framing and paneled up on the outside, over the joints of which mouldings are nailed on. The boot side is made of solid 7/8-inch stuff and the bracket and hind corner pillar pieces are fitted to the side separately, and screwed to it from the inside and tapered down to level with the thickness of the moulding along the bottom side, as shown in the front and back sections, Figs. 2 and 3.

A side light is most necessary, as is also a roof luggage rail, which is paneled with gauze. The wind shield front light is made to hinge towards the body, and can be held at any desired angle with a winged thumb-screw, which is clearly shown in Fig. 2, as is also the method of making and fixing the screen in its entirety.

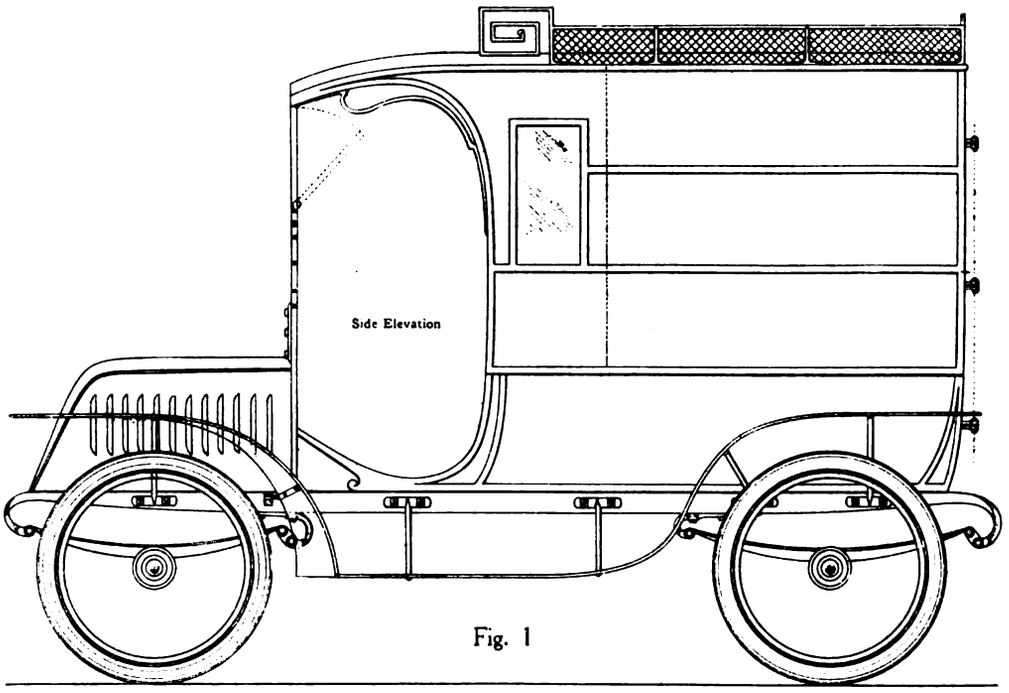


Fig. 1

Side Elevation of Delivery Car Mounted.
Described on this page.

The hind doors are made in halves and hung with outside hinges, which for this work are by far the best and strongest, their L feet being made to let in level with the standing and doors pillars.

The suspension is on half elliptic springs and scrolls; the front and back ends of the chassis frame are forged to the formation of scrolls, which for the purpose make an excellent job. The wings and foot board are fixed to stays, which are fully explained in the elevation, Fig. 1. The line of the hind wing is gracefully brought down to the foot-board level, and jointed and fixed to the foot-board as shown in outline only.

The design in its elevation is of pleasing outline and good proportion, while the balance of the wheel's position ensure steady running, which is of first importance.

Fig. 2 shows the full outline design of the front of the body, while Fig. 3 shows the half back view and the position of the mouldings on the quarters and door framing. The front bracket pillar pieces and the hind corner pillar pieces are of course got out in the widths covered by the span of their mouldings, which are boxed out in the solid to a panel depth.

Digitized by Google

The solid sides of the body are built square up and as the upper part projects over the side the width of the top of the back and front side pillar pieces cause them to be built in the same way as a stanhope or mail phaeton body sometimes is.

The working construction of the body is fully shown in the inside elevation, Fig. 5. The vertical and cross framings are clearly explained in this section. The panels ought to be canvassed before being dressed up, so that when they are put on the glue surface is perfectly dry and hard and makes a clean job of the work. The canvas should be thoroughly well painted as a preservative and a prevention to the panel buckling.

When panels of this kind are canvassed after being secured to the framing the outline of the framing can often be plainly seen through the varnished surface, owing to the absorbing

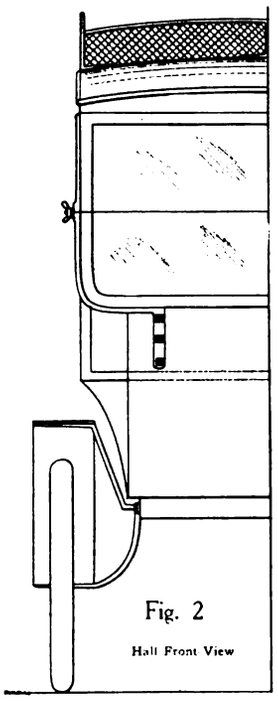


Fig. 2
Hall Front View

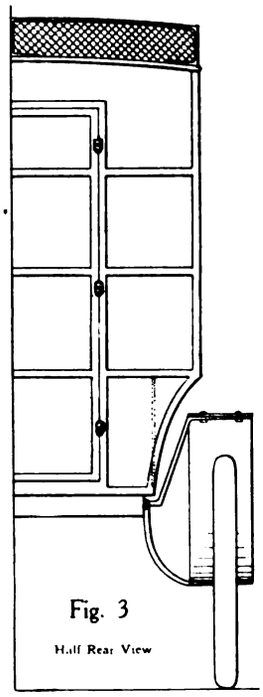


Fig. 3
Half Rear View

quality of the glue in drying and binding the corners of the rotted canvas to the framing. This is a feature of canvas frequently seen in private 'bus bodies turned out by good houses, but it should be avoided for the reasons stated herein.

The framing is left as shown in the drawing, without further elaboration. The top of the body side on the seat line is extended so that it becomes a special compartment for the packing of parcels of a particular or special character.

Fig. 6 shows the half front of the body in proportion. Fig. 7 shows the half section and the lines of framing, while Fig. 4 shows the half plan. To the practical body maker, or the learner, these drawings and instructions will be quite clear, while they are not beset with indefinable lines.

The dimensions are: Full length of body on bottom side, line 6 ft. 10 in.; length on seat line, 5 ft.; depth of side 15 in.; depth of top body from top of side to cant-rail, 39½ in.; rise on roof, 1½ in.; depth of roof-rail, 5 in. Size of front side light, 18 in. by 8 in. Width of body on back at bottom, 36 in.; width over seat line, 4 ft.; width of door, 22 in. The front of the body is plaited with half round-edge plate, while the hind door way is plaited on the top of cross bar, and up the standing and shutting pillars. Width of chassis, 33 in.; width of front seat, 15 in.

The value of carriage exports from the United States for the ten months ending April 30 was $3,936,315, as compared with $3,513,331 in the same months of last year and $3,421,101 the year before. The increase, however, is due more to an advance in prices than to the number of jobs exported.

NEW IGNITION METHOD HAS GOOD FEATURES

Regarding the relative merits of the high tension and low tension ignition systems, Roger B. Whitman, Technical Director, N. Y. S. A. E., says:

The problem that is to be solved is the quick and accurate ignition of a charge of combustible gases confined in a chamber, a definite time being allowed for the process and combustion being completed as the piston reaches its upper dead point. When an engine is running at 1,200 revolutions per minute, which is by no means excessive, the duration of one stroke of the piston is one-fortieth of a second. As ignition should not occur until the piston has passed the mid-point of the compression stroke, the time allowed for ignition and combustion may be considered to be about one one-hundredth of a second.

Now, if it were desired to burn a pinch of gunpowder in as short time as possible it is obvious that better results would be obtained by applying the igniting flame to as large a surface of the powder as possible than by igniting a single grain and expecting the flame to spread from that to the whole mass. A similarly obvious statement may be made regarding the ignition of the gaseous charge in the cylinder, for quicker ignition will result from passing a large flame through the mixture than a small flame or a thin electric spark.

Broadly speaking, there are four methods by which the ignition of the charge is accomplished in automobile engines. These are jump spark by battery and coil, jump spark by high tension magneto, make-and-break spark by low tension magneto and mechanical interruption, and make-and-break spark by low tension magneto and magnetic interruption.

The battery and coil system produces a rapid succession of sparks, and as the secondary current is high in voltage but very low in amperage the sparks are thin and low in heat and consequently in ignition power. The secondary current, produced by a high tension magneto is lower in voltage and higher in amperage, the sparks being in the nature of a voltaic arc, high in heat and giving much quicker ignition. Only one spark is produced, and it does not exceed one-sixty-fourth of an inch in length, as against a spark of twice the length that is produced by battery and coil. The superior heat producing quality of the high tension magneto spark, however, results in far better ignition.

Leaving the question of ignition to one side, the high tension system has the advantage of being applicable to practically any engine, the designer being required only to provide an opening into the combustion space for the spark plug, and a drive for the magneto or timer. Another advantage, which is a decided one, is that the only opening into the combustion space is that provided for the spark plug, and if this is carefully fitted the danger of leakage of compression is reduced to a minimum.

A disadvantage, however, is the presence of a high tension current and its constant tendency toward leakage, and, in the case of the battery and coil, a multiplicity of wiring. These points may be summed up in the statement that the high tension system presents a combination of mechanical superiority and electrical inferiority.

The most usual method of applying the low tension system of ignition provides a device in the combustion space by which an arm is moved into contact with a pin and then separated from it, this action closing and then breaking the circuit. The current that flows is low in voltage, but high in amperage, and the spark that appears at the point where the circuit is broken has the appearance of a flame, and may be one-eighth of an inch or more in length.

This gives positive and rapid ignition, but mechanical complication, for the movement of the arms requires the provision of cams, tappets, a somewhat complicated method of securing the spark advance, and, what is more important, a bearing in the cylinder wall that will sooner or later provide an opportunity for a leak of compression.

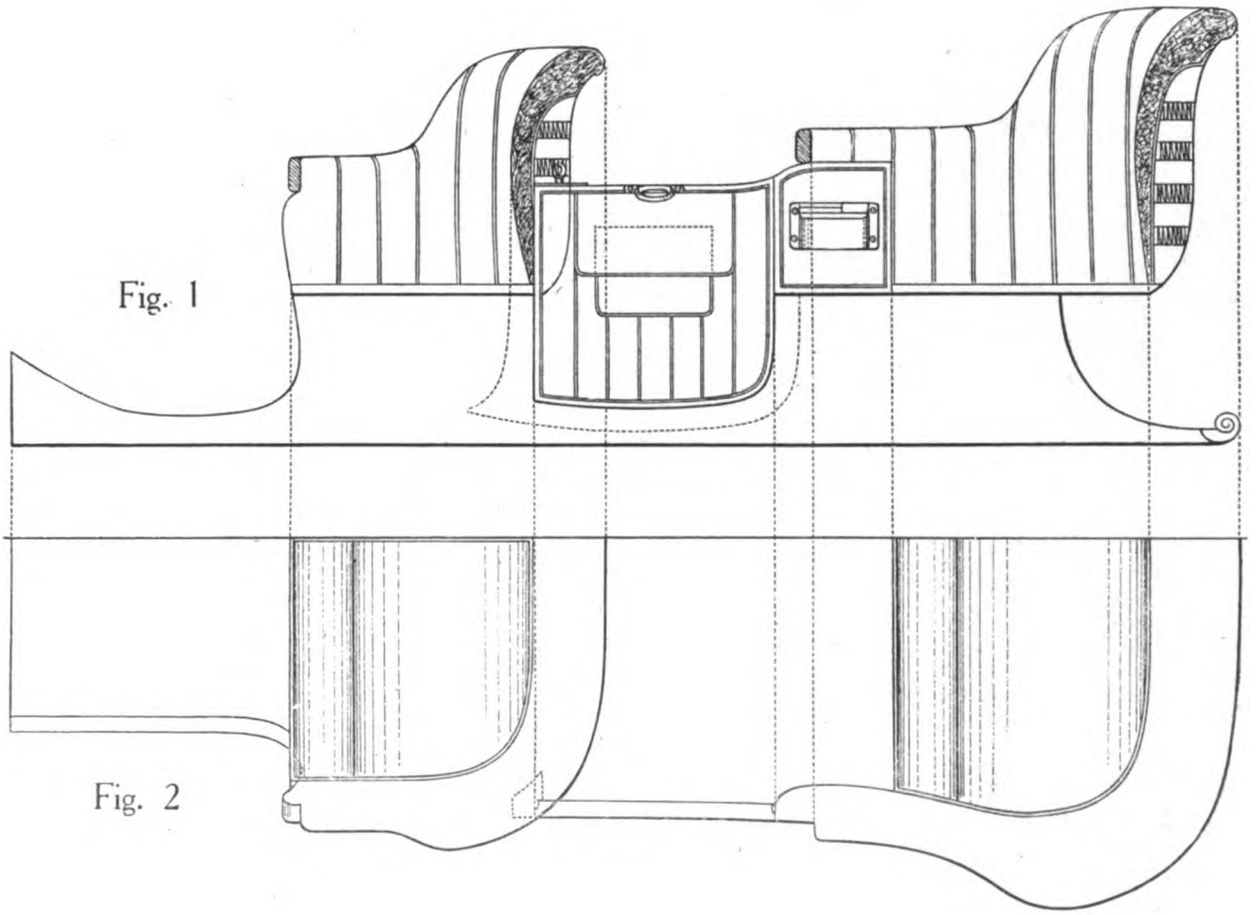
In addition, the wearing of the arms and pins, which is inevit-

Digitized by Google

able, will result in the production of the spark at the wrong point in the stroke, and frequent adjustment is necessary. The low tension current, however, permits the use of light insulation and simple wiring, and the system is a combination of electrical superiority and mechanical inferiority.

The make and break system of ignition making use of magnetic interruption would seem superior to the methods enumerated, for it combines mechanical and electrical superiority, the spark produced being the equal of that of the mechanical interrupted type. The interruptor is similar in appearance to the plug of the jump spark system and screws into a threaded opening in the cylinder wall, the joint being tight.

It consists of the threaded sleeve screwing into the opening, an iron core insulated from it and an iron hammer bar pivoted to the core, its end being held in contact with the sleeve by a light spring. The hammer bar thus forms a conducting bridge between the core and the sleeve. Around the core is a coil of wire. The magneto is of the low tension type, but fitted with a distributor from which the current flows to the plugs according to the firing order of the engine. Arrived at a plug the current passes through the coil to a ground connection on the core and thence by the hammer bar to the sleeve and engine ground.



Pleated Upholstering for an Open Motor Car.
Described on this page.

PLEATED UPHOLSTERING FOR AN OPEN MOTOR CAR.

Illustrated on this page.

In the upholstering of motor carriages there is no settled standard in design. Motor car building being a new branch of carriage manufacture, employing immense capital, it has naturally had imported into it a many-sided wealth of intellect to bear upon its development. Hence its diverse formations in design and its mechanical achievements in solidifying a gauge speed, and as a carriage of pleasure.

The motor carriage having become a vehicle of fashion, its lines and finish must of necessity be those that harmonize with fashionable life, so far as it is contributory to it. Motorists are garbed and equipped in hideous and grotesque protectives, which make their appearance anything but attractive. Still they are the analogous movers in motoring fashion. While the ladies dressed in their richly colored attire and looking coyly from underneath their Moorish veils and head gear enrich the beauty of any motor car's outline, and lend a fine artistic harmony to the upholstery.

The colors of motor trimmings harmonize richly with the dresses of motorists. Red as a prevailing tone is greatly in demand, while dark olive greens and rich shades of fawn colored material are fine blending hues, and are largely used in motor car trimming.

The style of the upholstery in the accompanying illustration, Fig. 1, is in plain pleat columns, which when neatly done in its completion looks very smart. The advantage in the design is that dust cannot so readily find a lodgment. The squab is set out from the center of the back in space columns, and the lines of formation are pleated, so as to bear the columns out when stuffed to their fullness and position. The columns are lined continuously from the bottom of the squab and up over the neck roll, which must be very evenly worked in the stuffing.

Although there is nothing in the way of elaborate figuring in the design, still it requires quite as good a workman, if not better, than if this property were present to make smart work. The front part of the squab is made on plain panel, and fitted

Digitized by Google

with card case packed. The door squab is also set out in plain column divisions to match the squab, while the pocket and flap are in plain surface. The front seat, which is clear the full width of the body, is made in the quarter to match the hind squabbing. The front and back rest squabbing are shown in sectional view, and their stuffing with hair, and filling with conical springs fully illustrated.

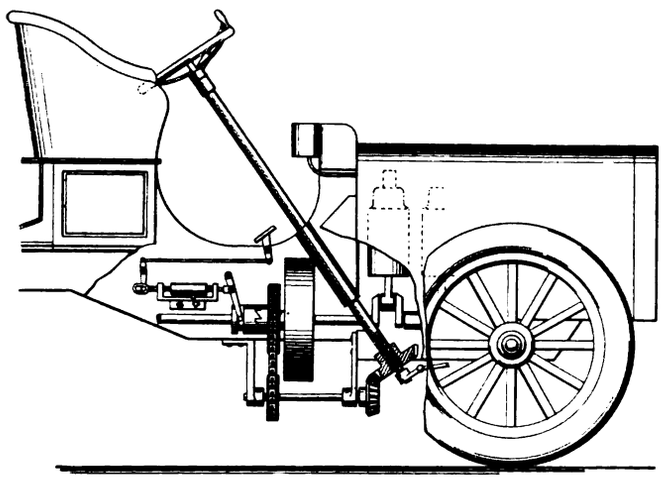
The half plan, Fig. 2, shows the top widths of the body quarters, and the style in which the cushions are surfaced; a wedge roll is made to the front of the cushions for greater seating comfort.

In the matter of door fittings as accessories, every car is turned out of hand without the necessary aids of pulls. The door in Fig. 1 is shown with a center hand pull, which is silver plated or made of rich brass, while the doors are invariably fitted with self-acting spring locks, with levers working from the top instead of inside handles, as used in horse drawn carriages.

MEANS FOR STARTING ENGINE FROM THE SEAT.

Mechanical engineers and others of an inventive turn of mind are spending much time and thought in an endeavor to evolve a practical means for starting the engine of a motor car without leaving the seat. The Patent Office recently granted to Clayton B. Lazenby, of Chicago, Ill., a patent for such a device which we here illustrate and describe.

Upon the drive shaft of the engine provide a clutch including two collars, one being slidably mounted upon the shaft but non-rotatable in respect thereto, and the other being rotatably mounted but held from longitudinal movement by any suitable mechanism, as, for instance, a collar. The engaging surfaces



of the two collars are provided with teeth, whereby the rotation of the collar in one direction will cause the simultaneous rotation of the collar and the shaft keyed thereto. One of the collars is provided with mechanism whereby it may be manually-rotated, and the other collar is provided with mechanism whereby it may be removed longitudinally to engage with the collar. The mechanism for rotating the collar preferably includes a sprocket wheel carried by said collar and connected by a chain leading to a sprocket wheel upon an auxiliary shaft. This shaft is supported in any suitable bearings extending downward from the vehicle body and one end of the shaft extends to a point adjacent the steering column or rod. Surrounding the column or steering rod, there is provided a sleeve so constructed as to be rigidly locked to the column at the upper end thereof, and operatively connected to the shaft at its lower end by suitable gearing, as, for instance, bevel gears.

NEW AUTOMOBILE FIRMS.

The Little Rock Auto Co., of Little Rock, Ark., has increased its capital stock from $10,000 to $20,000.

Andrew Hart and others of Red Cloud, Neb., have organized the Red Cloud Automobile Co.

The St. Paul Auto Co. has been organized to engage in the automobile business in St. Paul, Neb.

The Jonz Automobile Co. has been incorporated in Beatrice, Neb., and is erecting an automobile factory at that point.

The Augusta Motor Co. has been incorporated in Augusta, Ga., with a capital of $10,000, to engage in the automobile business.

The Southern Automobile Co. has been incorporated in Columbus, Ga., with a capital stock of $10,000.

The Eureka Motor Buggy Mfg. Co. has been incorporated in St. Louis, Mo., with a capital of $50,000.

Wm. Steffin is engaging in the automobile business in Beatrice, Neb.

The Motor Car & Device Co. has been incorporated in St. Louis, Mo., with a capital stock of $2,500.

J. H. Tamm, an implement dealer of Denison, Ia., has added a line of automobiles.

Wants

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, five cents a word. Initials and figures count as words. Minimum price, thirty cents for each advertisement.

HELP WANTED.

Wanted—A man thoroughly conversant and acquainted with the carriage and wagon trade in and around Greater New York. Must be capable and experienced. None others will be considered. Give reference and state salary expected. Address Timken Roller Bearing Axle Co., Canton, Ohio.

Wanted—Foreman trimmer for carriages and automobiles, to take charge of shop. "W. C.," care The Hub, 24 Murray St., New York City.

Wanted—Superintendent in factory employing one hundred men in Eastern city. Must be excellent designer, draftsman and mechanic with experience in high grade carriage and automobile work. Must also be of good address, capable of meeting and handling customers. A rare opportunity is offered to one who means business and is willing to work. State age, previous experience and full particulars, with reference. Address L. B. N., care The Hub, 24 Murray St., New York City.

Wanted—Traveling salesman either on salary or commission, who now has established trade on medium priced carriages and cutters, in South Eastern Pennsylvania. Address "C. O.," care The Hub, 24 Murray St., New York City.

SITUATIONS WANTED.

Wanted—Situation by foreman painter. Five years experience with the Holsman Automobile Co. Can furnish A1 reference. Address "C. R.," care The Hub, 24 Murray St., New York City.

Wanted—Position as assistant superintendent, or foreman, of the wood department in a large carriage plant. Up-to-date in both heavy and light work, and automobiles. Address Box 33, care The Hub, 24 Murray St., New York City.

Wanted—Position as Foreman Painter of carriage or automobile factory. Young man. Good reference. Address "Hustler," care The Hub, 24 Murray St., New York City.

Wanted—Situation by Foreman Trimmer with plenty of experience and best reference. Address "Y. K.," care The Hub 24 Murray St., New York City.

PATENTS.

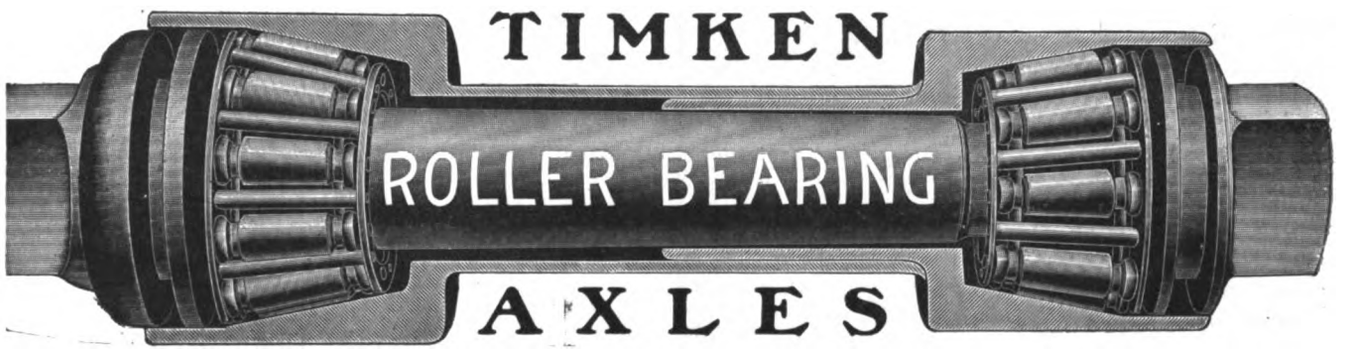
Patents—H. W. T. Jenner, patent attorney and mechanical expert, 607 F Street, Washington D. C. Established 1883. I make an examination free of charge and report if a patent can be had, and exactly how much it will cost. Send for circular.

Digitized by Google

The Gentleman from Missouri

generally has to be shown. Here is an instance of demonstrating an additional earning power of **450 per cent.** per annum, through the use of

Timken Roller Bearing Axles



St. Louis, Mo.

The Timken Roller Bearing Axle Co.
ST. LOUIS, MO.

Gentlemen—I have used a set of your 2½-inch Roller Bearing Axles in one of my coal wagons, and will say that they will do all you claim for them. With a set of common axles, my team, which is a small one, could only pull 85 bushels. The same team, with your Axles, pulls 110 bushels, which is all I can get on the wagon, but would doubtless pull more if the wagon was larger. The wagon makes four trips per day, and hauling 25 bushels additional, at 2½c., earns $1.50 more per day, or $450 a year on an investment of about $100 in the Axles.

By the use of your Axles, I have more than paid for both the Axles and the wagon by the extra saving made within a year. Of course this increased earning capacity of the wagon, or saving amounting to $450 a year, continues yearly thereafter, without any further investment. I can recommend them to every user of wagons as a time and money saving device.

Very truly yours,
ADAM DIEFENBACH.

This is not an individual case by any means. We have hundreds of such letters from users of

Timken Roller Bearing Axles

from all parts of the world. It is more than likely your customers would be interested in learning how two horses can do the work of four.

We will be glad to furnish you full information and facts for the asking.

The Timken Roller Bearing Axle Co.

CANTON, OHIO

BRANCHES: 10 East 31st Street, New York; 429 Wabash Avenue, Chicago

Digitized by Google

CARRIAGE FACTORY

Proposition of a Lifetime!

To settle an estate, one of the finest carriage plants in the country can be purchased at advantageous prices and liberal terms. Located in heart of a very substantial Western city. Good will second to none on heavy and light carriages and custom automobile body work.

This is a **going concern** and **will continue to be operated,** but as the principals are women this **rare opportunity arises.** Factory about 90 x 113 feet, five stories and full sized basement. Brick and stone construction. Nothing finer of its kind in United States, and complete in every department. Plant, machinery, merchandise and good will; or will sell machinery, merchandise, good will, and lease the factory on favorable rental. Greatest bargain ever offered to the carriage public. In operation over fifty years, and will continue whether sold or not. In great manufacturing city of about 50.000 population.

For price sand terms, address

CARRIAGE OPPORTUNITY,

Care The Hub, 24 Murray St., New York City.

You Can Easily Operate This Typewriter Yourself



Don't worry your correspondent.

Don't write him anything by hand that takes him time to make out—that may leave him in doubt—that he can't easily read.

And don't fill out legal papers or card memos—or make out accounts or hotel menus in your own handwriting.

It looks bad, reflects on your standing, makes people think you can't afford a stenographer, and is sometimes ambiguous.

You can write out your letters—make out an abstract—fill in an insurance policy—enter your card memos—make out your accounts or a hotel menu—or do any kind of writing you need, on *any* kind, size or thickness of paper, and *space* any way you want on

You can write any of these things yourself if you do not happen to have a stenographer.

The OLIVER Typewriter

The Standard Visible Typewriter

For you can easily learn, with a little practice, to write just as rapidly, and as perfectly, as an expert operator on the OLIVER. Because the OLIVER is the *simplified* typewriter. And you can see every word you write. About 80 per cent, *more durable* than any other typewriter, because it has about 80 per cent. *less wearing points* than most other typewriters.

Eighty per cent. *easier* to write with than these other *complicated, intricate machines* that require "humoring"—technical knowledge—long practice and special skill to operate.

Than machines which cannot be adjusted to any special space—with which it is impossible to write abstracts, insurance policies, or odd-size documents except you buy expensive *special* attachments requiring experts to operate.

You can adjust the OLIVER to any *reasonable space*—you can write on *any* reasonable size and thickness of paper, right out to the very edge, without the aid of *any expensive attachment* or special skill, and your work will be neat appearing, legible and clear.

For the OLIVER is the typewriter for the doctor, the lawyer, the insurance agent, the merchant, the hotel proprietor—or any man who does his own writing.

Write us now for our booklet on the *simplified* features of the OLIVER

The Oliver Typewriter Company

310 Broadway New York City, N. Y.

INDEX TO ADVERTISERS.

American Roller Bearing Fifth Wheel Co. 18
Auxiliary Spring and Ventilating Button Co. 5

Barnes & Co., W. F. & John 18
Beaudett Co., O. J. 18
Beckwith & Chandler Co. 2
Bentel & Margedant Co 6
Bertram & Lamoreaux 24
Bimel-Ashcroft Mfg. Co. ..... 3d cover
Bradley & Son, C. C. 23

Carriage Opportunity 14
Central Bureau of Engraving 16
Columbus Bolt Works ..... 4th cover
Consolidated Rubber Tire Co. 2
Crane & MacMahon ..... 2d cover

Dalzell Axle Co. 21
Defiance Machine Works 17
Devoe, F. W., & Raynolds Co., C. T. ..... 3d cover

Eagle White Lead Co. 6
Eccles Co., Richard 19
English & Mersick Co., The 3

Fitch Gear Co. 22
Flexible Shaft and Tool Co. 6

Gerhab, Jacob 22
Gifford & Son, John A. 23
Goodrich Co., B. F., The 5
Goodyear Tire and Rubber Co 1

Hankinson, J. V. 18
Harland & Son, Wm. 1
Hoopes Bro. & Darlington, Inc. ..... 2d cover

Jones & Co., Phineas 15

Keystone Forging Co. 21
Kiblinger Co., W. H. 21
Kokomo Rubber Co. ..... 4th cover

Landsman Motor Co. 16
Landers Bros. Co. 15

Masury & Son, John W. 2
Maxwell & Fitch Co. ..... —
McKinnon Dash Co. ..... 4th cover
Miller Bros. 23

National Safety Fifth Wheel Co. 15
National Spring and Wire Co 1
Nobles & Hoare 4

Ohio Seat Co. 23

Palm, Fechteler & Co. 1
Pomeroy & Fischer 4
Porter, H. K. 23

Russell, Burdsall & Ward Bolt and Nut Co. 22

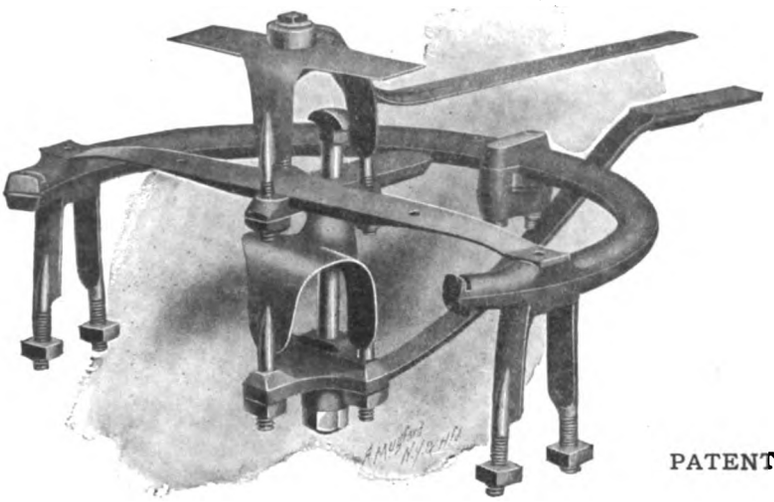
Schacht Mfg. Co. 18
Sheldon Axle Co. 21
Smith & Co., Edw. 1
Spring Perch Co. 21
Standard Ball Axle Co. 15
Standard Oil Cloth Co. 17
Stein Double Cushion Tire Co. 3
Strelinger Marine Engine Co. 24

Timken Roller Bearing Axle Co. 13

Valentine & Company 4

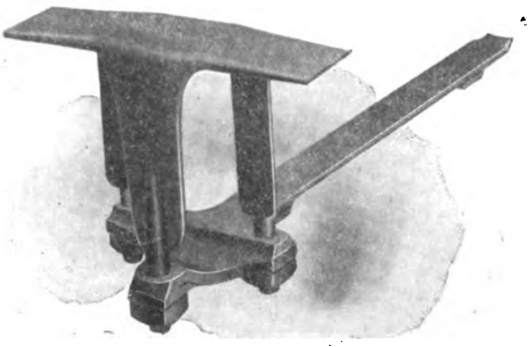
West Tire Setter Co. ..... 3rd cover
Wiese & Co., Wm. 23
White, H. F. 2
Wilcox Mfg. Co., D. 15
Willey Co., C. A. ..... 2d cover
Woodman, Joel H. 15

Digitized by Google



No. 1902. Single Reach.

PATENTED.



No. 35½ and 41¾. Perch Heel.

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MFG. CO.

MECHANICSBURG, PA.

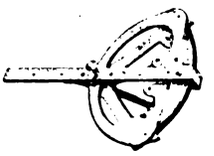
IT DOES THE TRICK R. F. D. SPECIAL



This axle runs easier than any other, and requires no attention. IT'S A WONDER Ask why. We can prove it.

STANDARD BALL AXLE WORKS, Lancaster, Pa.

National Safety
Short-Turning Fifth Wheels
Are Giving Universal Satisfaction.
Ask Your Dealer for Them.
National Safety Fifth Wheel Co., Lancaster, Pa.

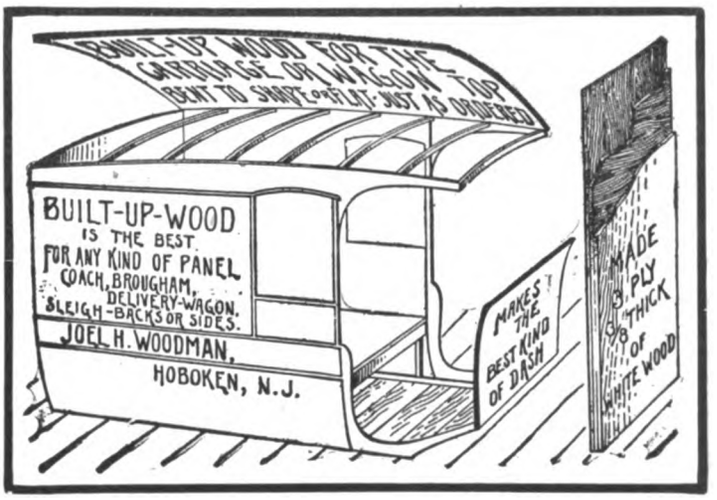


Style C.

Jones Wheels
BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.



LOWEST PRICES. *PROMPT SHIPMENTS.* *SUPERIOR QUALITY.*

TOLEDO **LANDERS BROTHERS CO.** **BOSTON**

We Are the Pioneers in the

SHEETINGS, WEBBING — 32 Grades Single, Double, Three-Ply — **BUCKRAM LINE** — Four-Ply and Canvas Lined — DUCKS, WADDING

Celluloid Sheets, Enameled Muslins, Drills and Ducks

SCRIM. *RATTAN MOULDING.* *BATTS.* *OILED DUCK.* *OIL CARPET.*

Digitized by Google

HOTEL CUMBERLAND

NEW YORK

Southwest Cor. Broadway at Fifty-fourth St.

Near 50th St. Subway and 53d St. Elevated Stations and accessible to all surface lines.



Headquarters for Carriage and Automobile Trade

Ideal Location, Near Theatres, Shops and Central Park.

NEW AND FIREPROOF

STRICTLY FIRST-CLASS IN EVERY RESPECT

All Outside Rooms. No Carpets. All Hardwood Floors and Oriental Rugs.

European Plan.

Transient Rates, **$2.50** with Bath, and up.

Restaurant Unexcelled. Prices Reasonable.

SEND FOR BOOKLET.

HARRY P. STIMSON, *Formerly with Hotel Imperial.*

R. J. BINGHAM, *Formerly with Hotel Woodward.*

Build Your Own Auto

A GASOLINE ENGINE TO FIT ANY BUGGY or WAGON

LANDSMAN MOTOR CO.

908 Hickory St. ST. LOUIS, MO.

Write for Catalogue.

MANUFACTURERS

DESIRING FIRST-CLASS ILLUSTRATIONS OF THEIR PRODUCT, AT REASONABLE PRICES, SHOULD PERMIT US TO SUBMIT AN ESTIMATE.

Central Bureau of Engraving

COMMERCIAL ENGRAVERS

157-159 WILLIAM STREET, NEW YORK

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

AXLES, ETC.
- Dalzell Axle Co., South Egremont, Mass.
- Sheldon Axle Co., Wilkes-Barre, Pa.
- Standard Ball Bearing Axle Co., Lancaster, Pa.
- Timken Roller Bearing Axle Co., Canton, Ohio.

BODIES, SEATS, ETC.
- Beaudett Co., O. J., Pontiac, Mich.
- Woodman, Joel H., Hoboken, N. J.

BODIES IN THE WHITE.
- Miller Bros., Amesbury, Mass.

BOLTS AND NUTS.
- Columbus Bolt Works, Columbus, O.
- Russell, Burdsall & Ward Bolt and nut Co., Port Chester, N. Y.

CARRIAGE CLOTHS.
- Wiese & Co., Wm., New York City.

CARRIAGE FORGINGS.
- Cortland Forging Co., Cortland, N. Y.
- Eccles Co., Richard, Auburn, N. Y.
- Keystone Forging Co., Northumberland, Pa.

CARRIAGE HARDWARE.
- Gifford & Son, John A., New York.

CARRIAGE GOODS.
- English & Mersick Co., New Haven, Conn.
- Gifford & Son, John A., New York.
- Wiese & Co., Wm., New York.

DASHES, FENDERS, RAILS, ETC.
- McKinnon Dash Co., Buffalo, N. Y.

ENGRAVING.
- Central Bureau of Engraving, New York City.

FIFTH WHEELS.
- American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
- National Safety Fifth Wheel Co., Lancaster, Pa.
- Wilcox Mfg. Co., D., Mechanicsburg, Pa.

FINISHED VEHICLES.
- Schacht Mfg. Co., The, Cincinnati.

JACKS.
- Hankinson, J. V., Franklin, Ohio.

LAMPS.
- Gifford & Son, John A., New York.
- Stevens & Sackett Co., New Haven, Conn.

MACHINERY AND TOOLS.
- Barnes Co., W. F. & John, Rockford, Ill.
- Bentel & Margedant Co., Hamilton, Ohio.
- Defiance Machine Works, Defiance, Ohio.
- Maxwell & Fitch Co., The, Rome, N. Y.
- Porter, H. K., Everett, Mass.
- Strelinger Marine Engine Co., Detroit, Mich.
- West Tire Setter Co., Rochester, N. Y.

MISCELLANEOUS.
- Bertram & Lamoreoux, Detroit, Mich.
- Landers Bros. Co., Toledo, Ohio, and Boston, Mass.
- Standard Oil Cloth Co., New York.

MOTORS, AUTO PARTS, ETC.
- Kiblinger Co., W. H., Auburn, Ind. Mich.

ORNAMENTS.
- Palm, Fechteler & Co., New York.

RUBBER TIRES.
- Consolidated Rubber Tire Co., New York City.
- Goodrich Co., B. F., Akron, Ohio.
- Goodyear Tire and Rubber Co., Akron, Ohio.
- Kokomo Rubber Co., Kokomo, Ind.
- Stein Double Cushion Tire Co., Akron, Ohio.

SHAFT COUPLINGS AND ANTI-RATTLERS.
- Bradley & Son, C. C., Syracuse,
- Eccles Co., Richard, Auburn, N. Y.

SPOKES.
- Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.

SPRINGS AND GEARS.
- Auxiliary Spring and Ventilating Button Co., Detroit, Mich.
- Fitch Gear Co., Rome, N. Y.
- National Spring and Wire Co., Albion, Mich.
- Spring Perch Co., Bridgeport, Conn.

TOPS.
- Peerless Buggy Top Co., Cincinnati, Ohio.

TRIMMING MATERIALS.
- Stevens & Sackett Co., New Haven, Conn.

VARNISHES, PAINTS AND JAPANS.
- Beckwith-Chandler Co., Newark, N. J.
- Devoe, F. W., and C. T. Raynolds Co., New York City.
- Harland & Son, Wm., London and New York.
- Masury & Son, John W., New York and Chicago.
- Nobles & Hoare, London, England.
- Pierce Co., F. O., New York City.
- Pomeroy & Fischer, New York City.
- Smith & Co., Edw., New York City.
- Valentine & Company, New York, Chicago, Boston, Paris.
- Willey Co., C. A. Hunter's Point, New York City.

WHITE LEAD.
- Eagle White Lead Co., Cincinnati, Ohio.

WHEELS.
- Crane & MacMahon, New York.
- Gifford & Son, John A., New York.
- Hoopes Bro. & Darlington, West Chester, Pa.
- Jones & Co., Phineas, Newark, N. J.

WHEEL STOCK, BENT WOOD, ETC.
- Crane & MacMahon, New York.

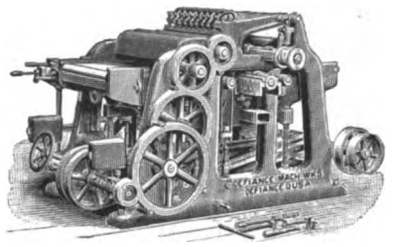
Digitized by Google

"DEFIANCE" WOOD-WORKING MACHINERY

Invented and Built by

The Defiance Machine Works

Defiance, Ohio



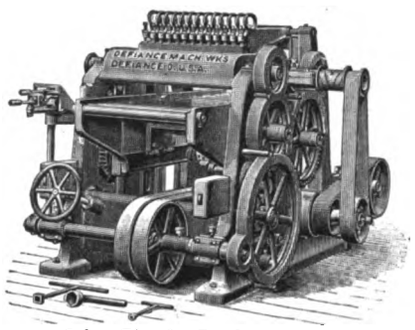
26 in. Double Surface Planer

For Making

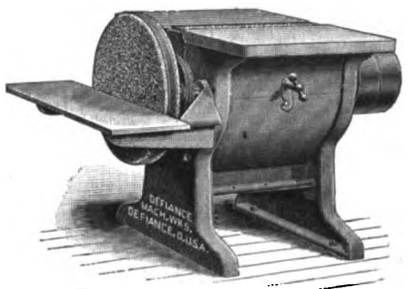
Hubs, Spokes, Wheels, Wagons, Carriages, Rims, Shafts, Poles, Neckyokes, Singletrees, Hoops, Handles of all Kinds, Insulator Pins, Bobbins, Spools, Table Legs, Oval Wood Dishes and for General Wood Work.



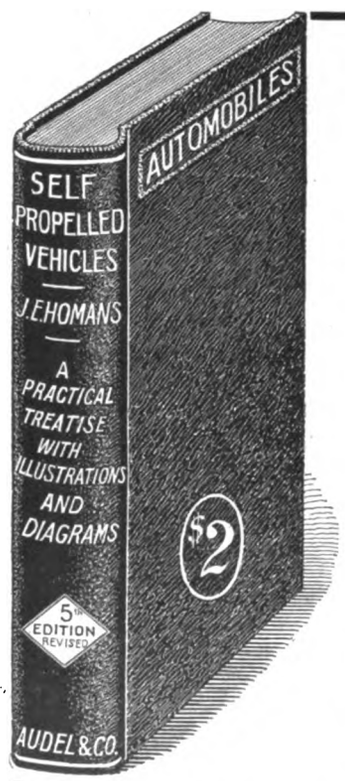
No. 0 Carriage Wheel Boxer



26 in. Single Surface Planer



Drum and Disc Sander



"Self-Propelled Vehicles"

Fifth Edition, Revised.

A practical treatise on the theory, construction, operation, care and management of all kinds of Automobiles.

By

JAMES E. HOMANS, A.M.

Contains 608 pages and upwards of 500 illustrations and diagrams, giving the essential details of construction and many important points on the successful operation of the various types of motor carriages driven by steam, gasoline and electricity.

This work is now the accepted standard, explaining the principles of construction and operation in a clear and helpful way. This book will be sent postpaid to any address in the United States, Mexico or Canada upon receipt of $2.00.

Address

TRADE NEWS PUBLISHING COMPANY

24 Murray Street, New York

MERITAS

CARRIAGE ENAMELED **OIL CLOTH**

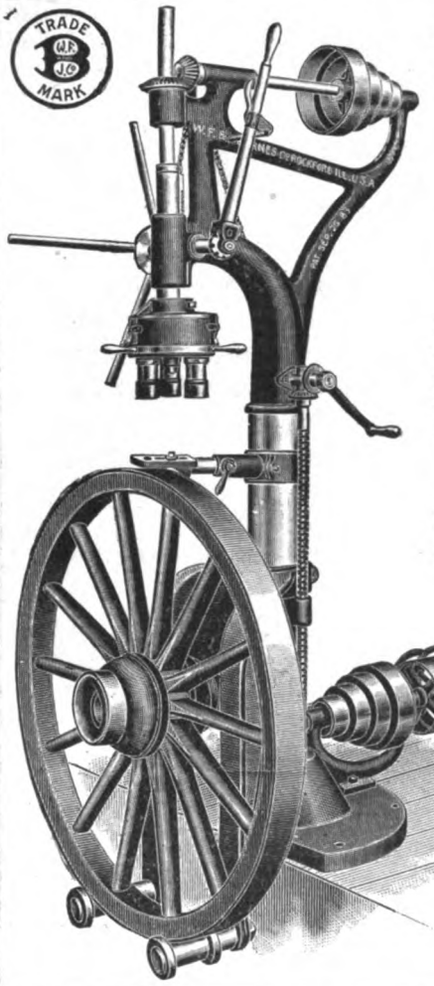


MERITAS isn't simply "oil cloth." It's a step higher than the best of ordinary kinds—beautiful, strong, and wear and tear-proof. Guaranteed not to peel or crack.

Standard Oil Cloth Co.

320 Broadway, NEW YORK.

Digitized by Google



A New
Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.

The Invincible Schacht

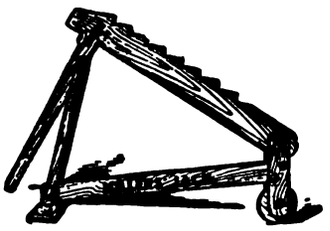
A WONDER IN A HUNDRED WAYS



MODEL K.

The simplest, most practical, efficient and economical car ever built. Sixteen h.p.. Friction Drive. Any speed up to thirty miles per hour. All parts interchangeable and thoroughly "getatable." Large wheels with cushion tires overcome all tire troubles. Almost noiseless and rides like a pneumatic. The greatest selling proposition on the market. Live agents wanted everywhere. Prompt deliveries and thorough satisfaction guaranteed. Send at once for catalogue, etc., and be convinced.

The SCHACHT MFG. CO., Cincinnati, O.



Made in four sizes, Nos. ¾, 1, 2, and 3.

JACKS FOR BUGGIES AND WAGONS

Miller Patent Wagon Jack
Made by

J. V. HANKINSON,

Successor to THOS. MILLER,
FRANKLIN, OHIO.

Write for particulars and prices.

Automobile Manufacturers

Write us for prices on Limousine, Touring Car or Runabout Bodies before placing contracts for your requirements.

Our Facilities enable us to handle any size order

GOOD WORK AND RIGHT PRICES.

O. J. BEAUDETT CO.

Pontiac, Michigan

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.
745 THIRD AVE., BROOKLYN, N. Y.

Digitized by Google

ECCLES BALL-BEARING COUPLINGS

The cut shows our coupling bolted to axle, and the form our flat leather bushing takes when the shafts are placed and locked in the coupling. The leather can be securely fastened in by the user, by driving a soft wire nail through the small hole we drill, which clinches it.

When the shafts are removed, the bushing does not come out, but stays in the Coupling where it belongs. NO LOST BUSHINGS WHEN YOU USE OUR COUPLINGS.

We would like to send you our circular and have you try our Couplings. They will save you money.



Patented June 11, 1907.

Patented Nov. 25, 1902.

The spring is pivoted at the front so that it can be turned forward out of the way of the wrench while clipping the Coupling to the axle.

These are two of the good points, but there are plenty more desirable features in our Couplings.

We also have a Catalogue showing our full line of CARRIAGE and WAGON FORGINGS, all of which we make

RICHARD ECCLES COMPANY, AUBURN, N. Y.

American Harness and Saddlery Directory

FOR 1908 IS NOW ON SALE

It is the most accurate and complete edition that has been published

Trade News Publishing Company

24-26 Murray St., New York

THE list of the **WHOLESALE** and **JOBBING TRADE** is so arranged as to make it convenient to separate the association members from those not so recognized.

The **RETAIL HARNESS MAKERS** of the United States and Canada comprise the principal part of the Directory, arranged by State, Town and County, and in the large cities, the street and number is given. Those rating (approximately) over $1,000 are marked.

A list of **HARNESS DEALERS** as distinguished from retail harness manufacturers, is also given. The value of this list to those who solicit the vehicle, implement, hardware and department stores will be readily appreciated.

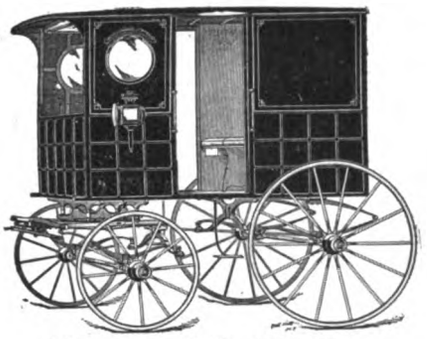
THE BUYER'S GUIDE is a valuable as well as unique feature. It contains an alphabetical classification of all the many and various articles made to sell to the trade, and the names of those making the various articles.

A list is also published of Export Commission Merchants, giving the class of merchandise they handle.

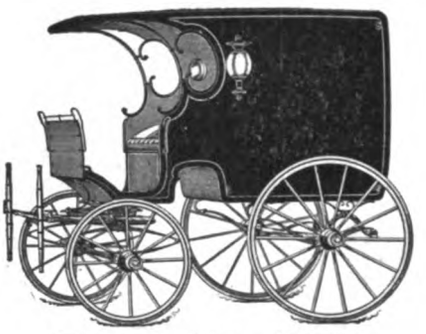
THE PRICE OF THE DIRECTORY IS $4.00, PAYABLE IN ADVANCE.

Please mention "The Hub" when you write.

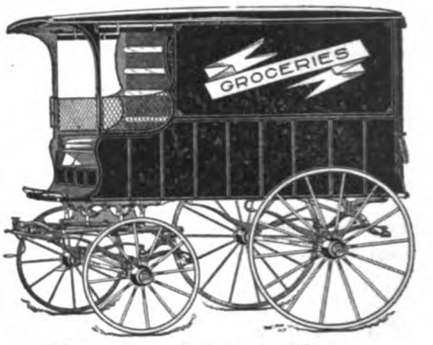
Digitized by Google



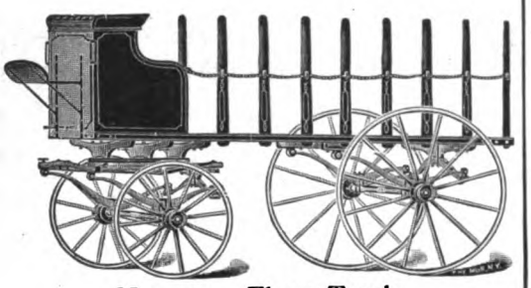
No. 112.—Milk Wagon.



No. 111.—Altman Wagon.



No. 113.—Grocery Wagon.



No. 122.—Flour Truck.

Electrotypes

of the vehicles presented on this page will be forwarded on receipt of

75 cts.

for each cut, to any address. Postage prepaid.

Catalogue

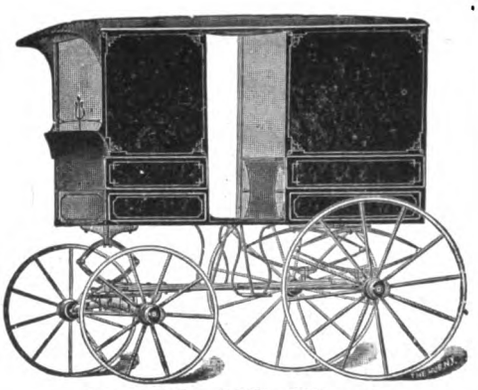
containing nearly 200 illustrations of carriages, wagons, sleighs, and miscellaneous cuts will be sent upon application.

Trade News Publishing Co.

24-26 MURRAY ST.
NEW YORK



No. 115.—Delivery Wagon.



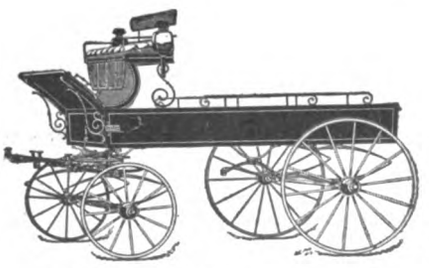
No. 116.—Milk Wagon.



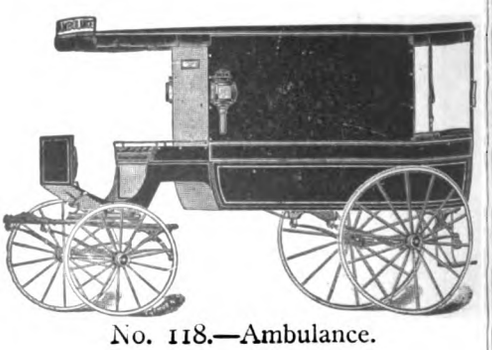
No. 117.—Merchandise Truck.



No. 114.—Delivery Wagon.



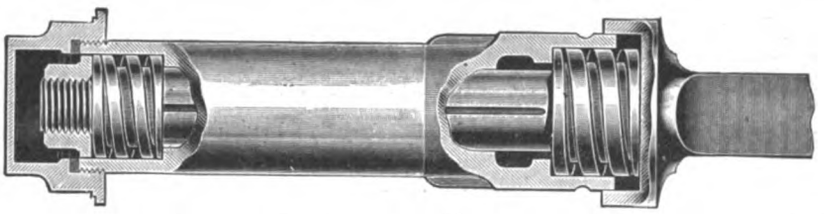
No. 124.—Delivery Wagon.



No. 118.—Ambulance.

Digitized by Google

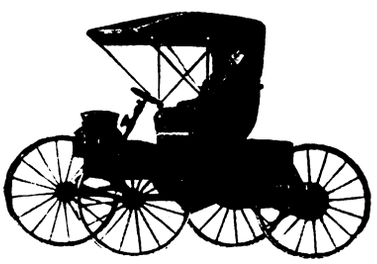
PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or conlinual adjusting of nuts.

FOR PARTICULARS WRITE

DALZELL AXLE CO., South Egremont, Mass.



GET THE AGENCY—MOTOR VEHICLES

11 H.P., $375. 13.6 H.P., $450.

Best Built; Best Seller.; Guaranteed. Double-cylinder, Air-cooled, Solid Rubber Tires. Upkeep light. Any roads, any time of year. Stylish, comfortable, reliable, powerful. Ask for The Proof and Catalog 161. Members A. M. C. M. A.

W. H. KIBLINGER CO., Auburn, Ind.



Axles

A complete line of Wagon and Carriage Axles—Common, Concord, Farm Wagon, Half Patent, Long Distance, Collinge and Mail Patent. Empire Ball Bearing Axles. Made only by

SHELDON AXLE COMPANY, Wilkes-Barre, Pa.

The Best and Easiest Riding Springs, for both Light and Heavy Vehicles. We have had very great success with our Automobile Springs : : : : : :

Springs



Plugless Piano Bodies

Corners absolutely tight and can not open. No plugs to work out or show through the varnish.

This body sells buggies.
Wouldn't it pay you to use it?

NATIONAL BODY & BOX COMPANY
PONTIAC, MICH.

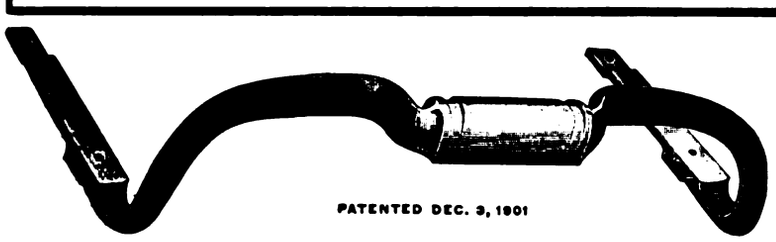
DON'T TRUST TO LUCK
ADVERTISE IT IN
THE HUB

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges
EXCLUSIVELY FIRST-CLASS WORK
THE BEST THAT CAN BE MADE

SPRING PERCH CO.
BRIDGEPORT, CONN.



THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland Pa.

Please mention "The Hub" when you write.

Digitized by Google



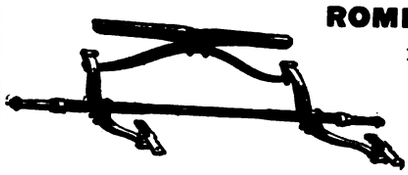
BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.

FITCH GEAR CO.

ROME, N. Y., U. S. A.



Manufacturers of over

40 STYLES of GEARS

From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.

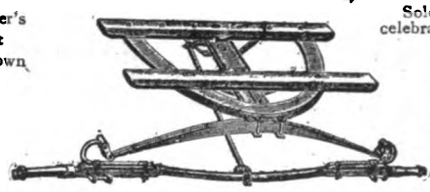
Sole Manufacturers of the celebrated

Kramer Lowdown Short Turn Gear

It is the Finest Gear for Drop Centre-Body for Milk, Bakers' or Butchers' Wagons on the market.

Send for our No. 22 Catalogue, just out.

Kramer's Patent Lowdown Gear.



C.H.A.T.

Helps Secure Situations.

Carriage, Harness and Accessory Traveling Salesmen's Association

OF THE UNITED STATES.

All Commercial Travelers in Above Lines Eligible. No Others. Pays Death Benefits.

Membership Fee, - - - $3.00
Annual Dues, - - - - 1.00

Employers of Traveling Men eligible to join as associate members on payment of $5.00, and are exempt from all further dues.

Manufacturers of carriages, harness or goods that enter into their construction, jobbers of same, can secure good, reliable and efficient salesmen through our Association, as the members of this Association have the best facilities for knowing all about men who are seeking situations, and none will be recommended unless they are first class and worthy of support.

Salesmen in need of a situation, or manufacturers in need of a salesman, address for further information,

L. H. KRONFELD, Secretary.

Box 57, Mount Vernon, N. Y.

HOTEL WESTMINSTER

Irving Place and 16th Street

NEW YORK CITY.



One block from **Union Square,** Surface, Elevated and Subway Cars. Midway between leading **Wholesale** and **Retail Stores** and **Theatres,** and yet far enough from Broadway to insure **Comfort** and **Freedom** from the noise and bustle of that thoroughfare.

Perfectly Quiet Locality and **Home-like** in every respect.

EXCELLENT CUISINE, EUROPEAN PLAN.

Single Rooms, $1.00 per day and up. Room with Bath, $2.00 per day and up. Parlor, Bedroom and Bath, $3.00 per day and up.

SEND FOR BOOKLET.

O. H. FOSTER, Proprietor.

Headquarters for "The H. D. Smith & Co.'s" Carriage and Wagon Forgings

JACOB GERHAB

DEALER IN

Carriage Cloths, Leathers and Trimmings, Wagon and Cart Material

Salable prices and all information cheerfully furnished

158, 160, 162 and 164 North Third Street
PHILADELPHIA, PA.

Digitized by Google

THE BRADLEY SHAFT COUPLING



OPEN

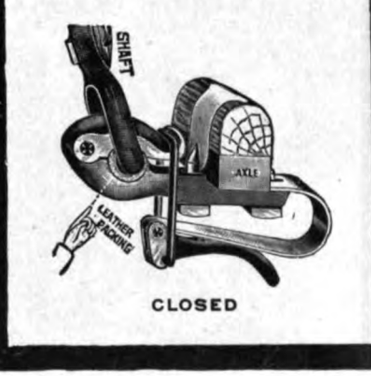
Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME!

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1¼ in. in section.

C. C. BRADLEY & SON, Syracuse, N. Y.



CLOSED

JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

MILLER BROTHERS

Builders of

CARRIAGES

IN THE WHITE

AND

Automobile Bodies

AMESBURY, MASS.

THE OHIO SEAT CO.

Manufactures PANEL SEATS

STICK SEATS of every description.

Also Canopy Frames, Cushion Frames and Buggy High Backs. Up-to-date Equipment. Write for Quotations.

1964-1966 CENTRAL AVE., CINCINNATI, O.

Bolt Clippers
Everett, Mass., U.S.A.

WM. WIESE
With Hardt, Von Bernuth & Co.
Since 1883.

WM. WIESE & CO.

ALBERT MAERTENS
With Hardt, Von Bernuth & Co.
Since 1894.

Formerly Carriage Goods Department of HARDT, VON BERNUTH & CO.

Carriage and Automobile Linings and Livery Cloths

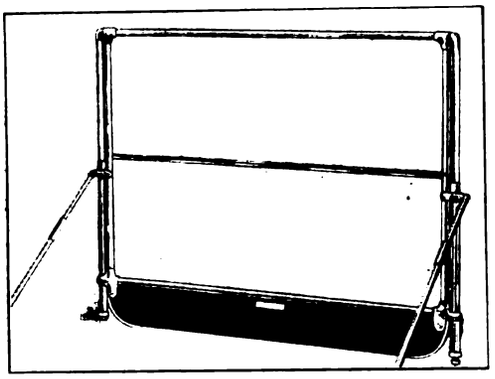
Sole Agents in the United States for
WULFING'S CARRIAGE CLOTH AND EL DE BARAN GOATSKIN.

66-68 Greene St., New York

Please mention "The Hub" when you write.

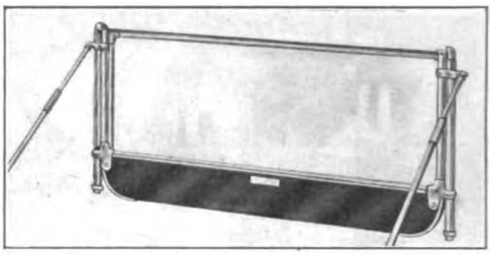
Digitized by Google

WILL NOT RATTLE—TELESCOPE WIND SHIELD





Try one and be convinced. Get a Wind Shield that is all we claim for it — absolutely the best on the market; one for which you need never make an apology; one that is not only a Wind Shield but an improvement to any car.

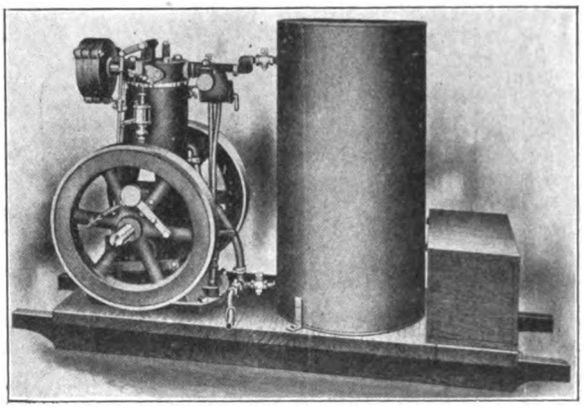




BURTRAM & LAMOREAUX,

72 Fort Street East, Detroit, Mich.

"THE STRELINGER"



Let This Motor Run Your Shop—Only One Cent an Hour per H. P.

You start it in the morning and it will run 'till night without any attention. Stop and start at your pleasure. Your power is always ready. Strong and steady. This motor will be a source of comfort and satisfaction to you. Send for catalog, and learn more about our STRELINGER ENGINES. One to fifty horse-power.

THE STRELINGER MARINE ENGINE CO.

Dept. Hub, 46 Congress St. E., Detroit, Mich.

NEW YORK CITY

THE HERMITAGE

A CLUB HOTEL FOR MEN

The name tells the story.

Seventh Ave. and Forty-second St.

Junction of Broadway.



Restaurant on the street floor —a restaurant where ladies are welcome.

Every other part of the house exclusively for men.

Telephones in every room.

Respectful, quiet, obedient and alert Japanese servants.

Bedroom and bath **$2.00** a day upward.

Send for Booklet.

T. F. PADDELL, Proprietor

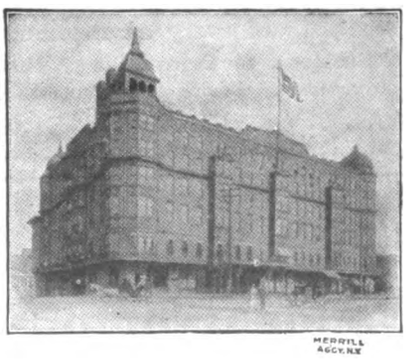
Journal for the Carriage and Automobile Trade

The Hub

Published Monthly at Two Dollars per Year

Kansas City's Most Popular Hotel

THE COATES HOUSE



Surface street cars from Union Depot direct to hotel.

Headquarters for Western Retail Implement Dealers' Association, Southwestern Lumberdealers' Association, Hereford Breeders' Association, Visiting Stockmen.

MODERATE RATES

Inter-State Hotel Co., Pr.

Also Lexington Hotel, Chicago

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES — **C. T. RAYNOLDS & CO'S** { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

Bimel-Ashcroft Manufacturing Company

Main Office, POPLAR BLUFF, MO.

Factories:
POPLAR BLUFF, MO.
MOREHOUSE, MO.
DERMOTT, ARK.
LOUISVILLE, MISS.

Foreign Correspondence Solicited.

SPOKES

OUR GROWTH

1902—1,310,241 Spokes

1903—3,240,185 Spokes

1904—5,485,748 Spokes

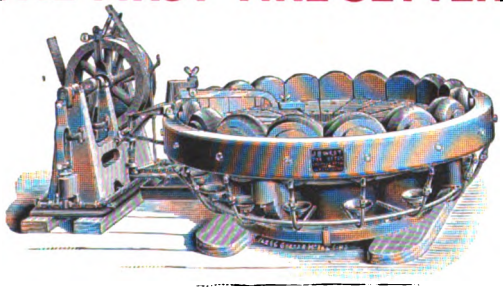
1905—7,845,653 Spokes

1906—7,927,759 Spokes

1907—7,748,839 Spokes

Our New Plant Increases Our Capacity to 12,000,000 Spokes

THE FIRST TIRE SETTER



you ever heard of was a **"WEST"**—probably, for they were on the market several years before any other and you are hearing more about them every year. Many of the older users are loudest in their praise. That's because they stand the test of time—they're made that way. Some of our Hydraulic machines have been **in use fourteen years** and are doing as good work now as when first installed. **Now,** we don't claim our machines are best simply because they have been longest on the market, **but because** we have been making a study of cold tire setting all these years and improving our machines as experience and observation taught us, and when you buy a **"West Hydraulic"** you get the benefit of this experience. Some people knowing **our** machines would set tires cold satisfactorily, thought some other would do as well—and the price was cheap—also machine. Now they wish they had bought a **"West Hydraulic." If you make a similar mistake it's your own fault.**

Buy a **"West Hydraulic"** and be happy. Hand or Power machines.

THE WEST TIRE SETTER COMPANY, Rochester, N. Y.

Digitized by Google



THE GREATEST IMPROVEMENT

You can make in your work for next season is to use our dash rails

WELDED SOLID TO DASH FRAME

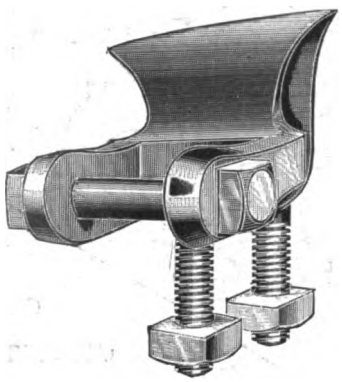
Protects Edge of Dash—Will Not Come Loose

McKinnon Dash Company

Cincinnati, Ohio
Troy, Ohio

Buffalo, N. Y.

St. Catharines
Ontario



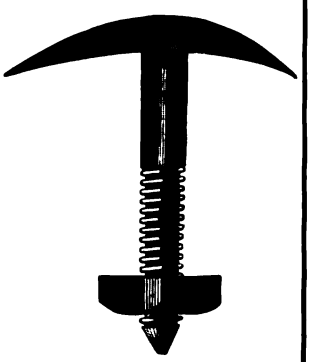
Skewed Shaft Couplings

Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips 5/8 or 3/4 width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

1908 Catalog "H" on application.

COLUMBUS BOLT WORKS, Columbus, O.



Kokomo Solid Rubber Tires

¶ In rubber substance the Kokomo Solid Rubber Vehicle Tire is truly **SOLID.**

¶ Solid with the pure stock that has made them an exception to the ordinary tires of commerce.

¶ In Kokomo quality there is an established standard that is recognized as the highest ideal of tire construction. The Kokomo is a standard tire in every respect.

¶ Kokomo Tires always score in the running, and the longer the test the more convincing the results.

Kokomo Rubber Company

Kokomo, Indiana, U. S. A.

Digitized by Google

The Hub



TRADE NEWS PUBLISHING CO
24-26 MURRAY ST., NEW YORK

Vol. L., No. 6. SEPTEMBER, 1908

Digitized by Google

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

C. A. WILLEY COMPANY

Color Grinders

AND MANUFACTURERS OF

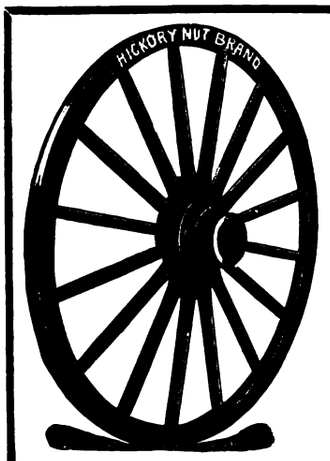
SPECIALTIES IN CARRIAGE and CAR PAINTS, COLORS, Etc.



92d St. Cars at Hunter's Point Ferry Pass our Factory.

Hunter's Point, New York City

CALL AND SEE US WHEN IN NEW YORK.



CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

HEAR YE!
HEAR YE!
HEAR YE!

All ye who labor in the Finishing Rooms of the Carriage and Automobile Industries! The best wearing and most beautiful and lasting finish is obtained by the use of

HARLAND'S ENGLISH VARNISH



The merits of Harland's Varnishes are backed by over a century of progress, and it is the unsurpassed quality of this varnish which has not only given the makers a universally pre-eminent position, but has also made it the standard by which all others are compared.

WM. HARLAND & SON
168 CENTER ST.
Factories: Merton, London S. W., England.
NEW YORK

WING
RUBBER CARRIAGE
TIRES



are made from tough, durable, lively New Rubber. QUALITY is the first consideration. Our "Wing" Tire will outwear several ordinary rubber tires. The wings (see cut) keep water, sand and grit from working between the channel and the tire, to wear out the tire from underneath. Write for particulars.

GOODYEAR AKRON, OHIO TRADE MARK.

The Goodyear Tire & Rubber Co.
Carriage Tire Dept.
Akron, Ohio

BRANCHES: Boston, New York, Buffalo, Chicago, Cincinnati, Detroit, St. Louis, Denver, Los Angeles, San Francisco.

81 Years' Experience in Every Can

E.S. 1827 &CO.

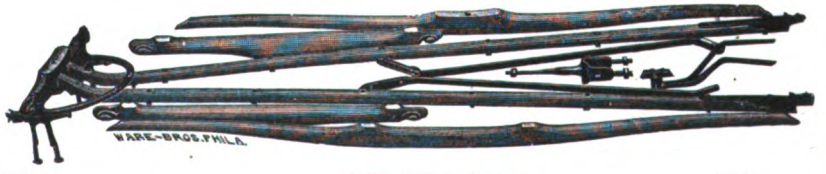
Edward Smith & Co.

Varnish Makers and Color Grinders

New York
45 BROADWAY

Chicago
3532 SOUTH MORGAN ST.

"OLD RELIABLE"



IRONED-UP SETS COMPLETE AND ALL STYLES OF FINISHED

Gear Woods

The J. A. & D. P. COOPER CO. Struthers, Ohio

Please mention "The Hub" when you write.

Digitized by Google

JOHN W. MASURY & SON

MANUFACTURERS OF

Superfine Coach Colors
:: :: and Varnishes :: ::

NEW YORK and CHICAGO

WHITE'S BRAZING SLEEVES

[redacted] MANUFACTURED BY [redacted]

H. F. WHITE, 111 E. Pearl St., Cincinnati, O.

"Not how cheap, but how good."

Beckwith-Chandler Company

Manufacturers of High-Grade

COACH AND RAILWAY VARNISHES

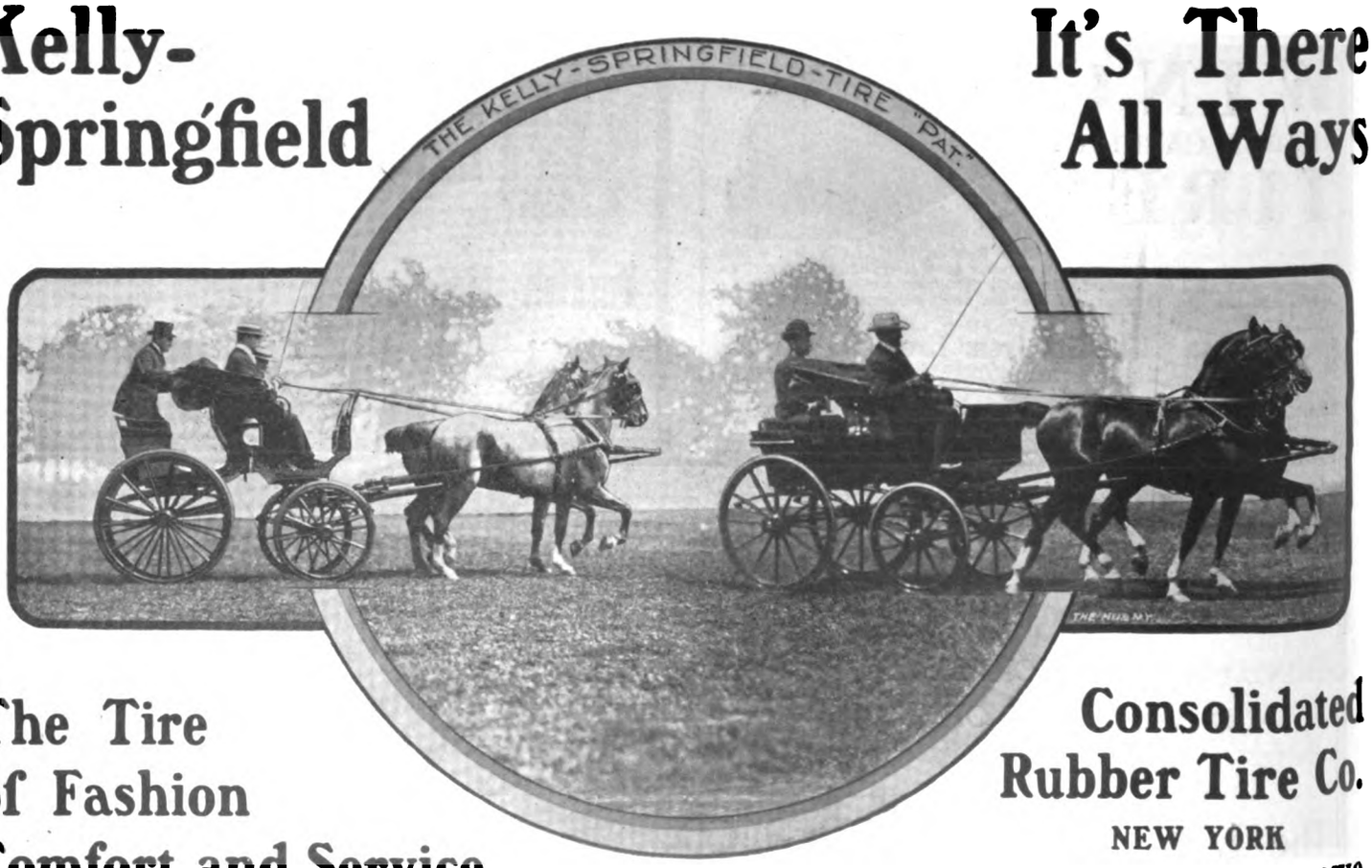
NEWARK, N. J. 201 EMMETT STREET

NEW YORK 320 FIFTH AVENUE

"100 per cent. quality in every can."

Kelly-Springfield

It's There All Ways



The Tire of Fashion Comfort and Service

Consolidated Rubber Tire Co.

NEW YORK

Factories: AKRON, OHIO

Please mention "The Hub" when you write.

Digitized by Google

Automobile Door Locks

In Buffalo, four years ago, a little boy was bumped out of a moving automobile. The "weave" of the machine was so great that the lock-bolt slipped out.

The manufacturer demanded a Safety Lock. We made it—the Original Safety Hook Lock—our No. 995. The following year we improved it, making it almost entirely automatic. It is all steel and drop-forgings, and the number is Nine-Ninety-Nine.

It is to-day the *Standard Door Lock in the automobile trade and is used by over 50 per cent. of the American manufacturers.

If you are not acquainted with our No. 999 Door Lock, your request for a sample pair on memorandum will be honored by return express.

You will have added much to your lock knowledge and we will be—well—we will be pleased to have had you look it over, anyway.

The English & Mersick Co.

New Haven, Conn.

P.S.—Don't forget the number—Nine-Ninety-Nine.

*Standard—Any established measure; a type, a model, or example for comparison.—*Standard Dictionary.*

Carriage Mechanics

Desiring to improve their present Condition should attend the

TECHNICAL SCHOOL

FOR

Carriage Draftsmen and Mechanics

SUPPORTED BY THE

Carriage Builders' National Ass'n.

The object of the School is to teach men to design vehicles and make working drawings, and to otherwise facilitate their work in the shop. Only those men employed in carriage or automobile building or their accessory trades are admitted to its privileges.

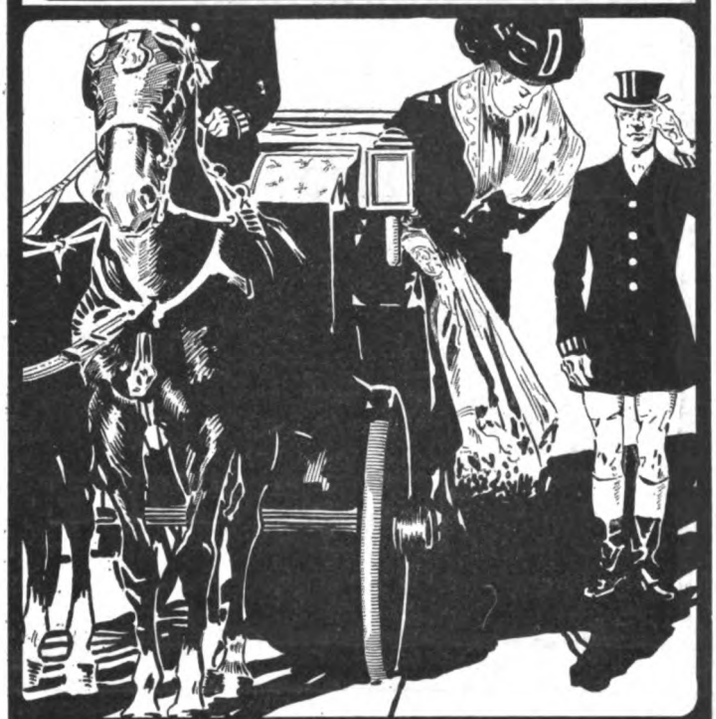
The classes are conducted in three divisions, viz.: Corresponding, Day, and Evening. The former is open during the entire year, while the day and evening classes are in session only from October 1st to April 1st.

The tuition is moderate.

For prospectus and full particulars, write to the instructor,

ANDREW F. JOHNSON,
18 West Forty-fourth St.,
NEW YORK CITY.

STEIN DOUBLE CUSHION TIRE





Patented 1892-1902.

A Perfect Tire

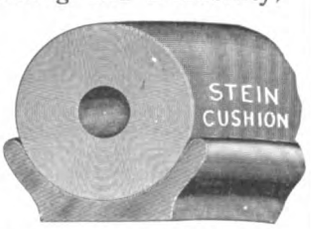
is the most economical tire to use.

STEIN DOUBLE CUSHION TIRE

HAS DEMONSTRATED THIS FACT.

In Quality they are superior to all other makes, and for Comfortable Riding and Durability, they have no equal.

All users of Stein Tires will testify to these facts.



Write for our proposition and prices.

STEIN DOUBLE CUSHION TIRE CO.
Akron Ohio

THE HUB CURLEY

Digitized by Google

Varnish

like charity, may cover a multitude of faults, but its own faults are always glaringly manifest.

Lawson Varnish

is compounded, ripened, perfected with the idea of heading off as many varnish faults as possible. A long experience is a great help in such a matter, and we have the experience.

Lawson Heavy Gear (one coat finishing for general work)

is heavier in body than Finishing Gear, though not so pale; but, being **heavier** body, is well adapted for finishing work where a single coat is required.

TRADE VALENTINES VARNISH MARK

VALENTINE & COMPANY

NEW YORK CHICAGO BOSTON PARIS AMSTERDAM TORONTO

"IT STANDS ALONE"

Johnston's

226 RED

GROUND IN JAPAN

GUARANTEED
PERMANENT
GOOD BODY

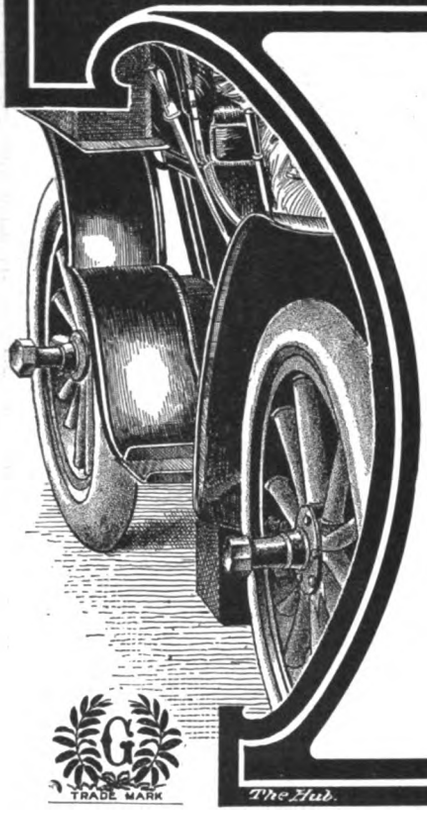
20c Per Pound

SAMPLE ON REQUEST

The R. F. Johnston Paint Co.,
Cincinnati, O.

Digitized by Google

GOODRICH TIRES



To Ride On

GOODRICH RUBBER

Is an Inexpensive Blessing

Goodrich Solids for the horse-drawn pleasure vehicle.

Goodrich Pneumatics for the motor car.

THE B. F. GOODRICH COMPANY
AKron, Ohio

CHICAGO ST. LOUIS CLEVELAND
PHILADELPHIA DENVER PARIS
BOSTON DETROIT LONDON

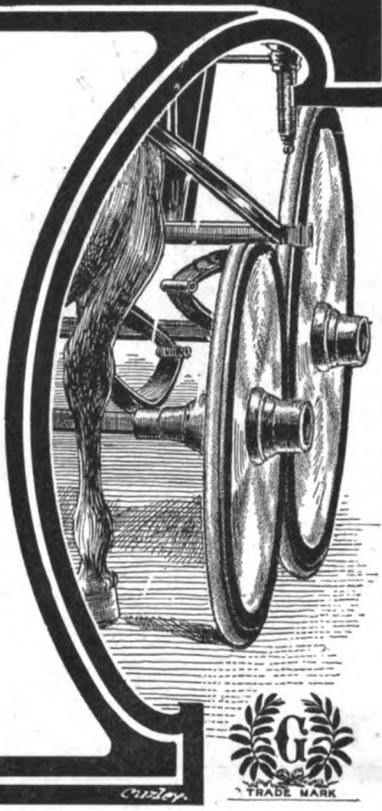
FACTORIES: AKRON, OHIO.

Our products are also handled in

NEW YORK and BUFFALO by

The B. F. Goodrich Company of New York.

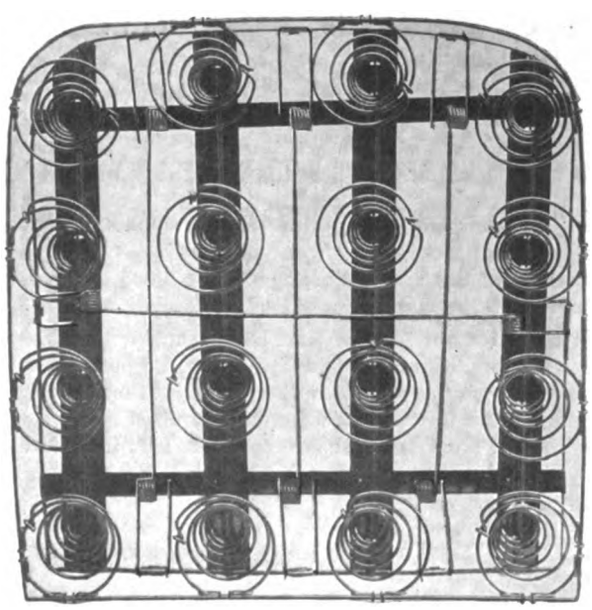
and in SAN FRANCISCO, LOS ANGELES, SEATTLE



TRADE MARK

TRADE MARK

ROYAL ARCH AUXILIARY SPRINGS



Soft Face Construction. Patented.

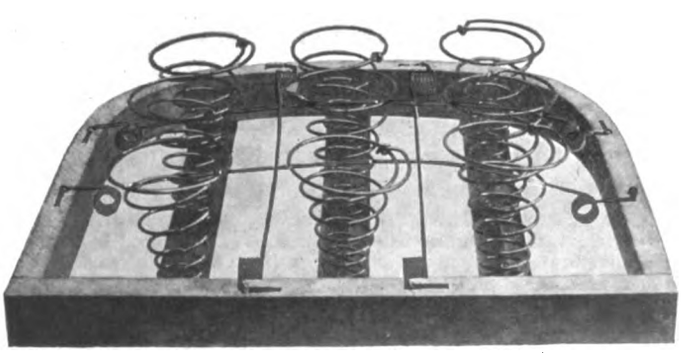
Auxiliary Spring & Ventilating Button Co.

DETROIT, MICH.

ROYAL ARCH AUXILIARY SPRINGS prevent the complete depression of the coiled springs, relieve the coils of the severe shocks, and greatly lengthen the life of the cushion. A cushion with Royal Arch Springs will never sag, and

FORTIFIES THE RIDER AGAINST THAT SUDDEN UNEXPECTED JAR

Will cost no more than the common construction. Why? Write us.



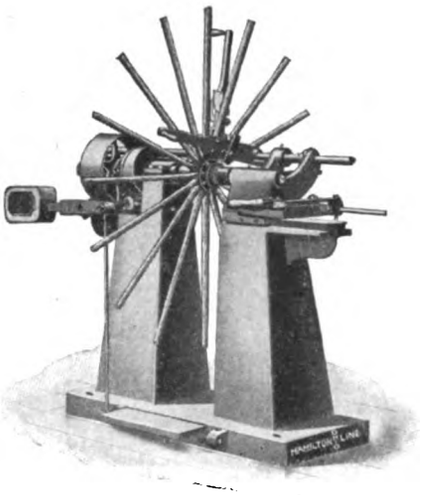
Wood Frame Construction. Patented.

Digitized by Google

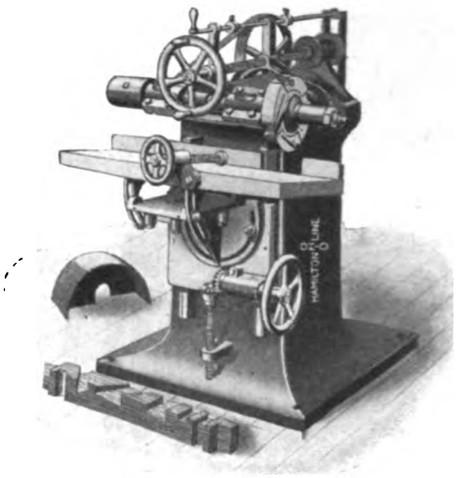
HAMILTON-OHIO-LINE WOOD WORKING TOOLS

For Automobile Body and Wheel Work.

Carriage, Wagon, Hub, Spoke, Rim and Wheel Factories







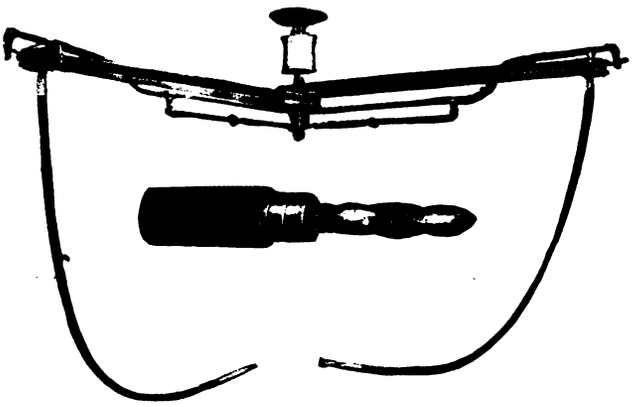
Hamilton Wheel Facer No. 339. **Hamilton Dowel Borer No. 315.** **Hamilton Traversing Gaining Machine No. 144.**

Disk Sanders, Belt Sanders, Spoke Sanders, Wheel Sanders, Gear Shapers, Scroll Eyeing Machines, Gear Rounders, Spring-Bar Boring Machines, Seat-Back Benders, Rim Planers, Rim Rounders, Rim Borers, Rim Cut-Off Machines, Wheel Boring & Screw Driving Machines, Spoke Lathes, Spoke Cut-Off Saws, Spoke Tenoning and Mitering Machines, Spoke Throaters, Spoke Facers, Wheel Facers, Wheel Tenoners, Hub Lathes, Hub Mortisers, Hub Borers, Wheel Boxers, Wheel Presses, Tire Truers, Tire Bolters, Spoke Cut-off Machines, Band Saws, Rip and Cross-cut Saws, Planers, Matchers, Moulders, Shapers, Boring Machines, Universal Wood Workers, etc., etc., etc.

THE BENTEL & MARGEDANT CO., Hamilton, Ohio, U. S. A.

There Are Others

BUT NONE SO GOOD



THIS IS THE

RADIAL BORING MACHINE

THAT GIVES SATISFACTION.

SPECIAL PATENTED PLUG BIT AND OTHER ATTACHMENTS IF DESIRED.

STEEL LINK CORE, STRONG AND DURABLE

PRICES:

Double Arm Machine, with Chuck.....$85.00
Single Arm Machine, with Chuck..... 65.00
A Discount of 15 per cent. when cash accompanies order

The Flexible Shaft & Tool Co.

BELLEFONTAINE, OHIO.

INDEPENDENT OF ALL COMBINATIONS

The Eagle White Lead Company's

"EAGLE" BRAND OF "OLD DUTCH PROCESS" WHITE LEAD

ALSO "EAGLE" RED LEAD, LITHARGE AND ORANGE MINERAL

Our **Special Coach and Carriage White Lead** is the best white lead on the market for this class of work.

We claim for our **"Eagle" Red Lead** that, for Durability, Color, Texture, Covering and Spreading Properties, it is not excelled by any red lead in the world. It requires more pure linseed oil to the hundred pounds, and when properly mixed it will not settle. It is the best foundation coating for vehicles known.

New York—54 Maiden Lane
H. C. Russell, *Manager*
Philadelphia—1901 Callowhill St.
Baltimore—447 North St.
Geo. O. Shivers, *Manager*
Buffalo—Builders' Exchange
A. S. Goltz, *Manager*
Pittsburg—
Pittsburg Paint Supply Co., *Agts.*
Cleveland—
The Hale & Holmes Co., *Agents*
Chicago—125-127 N. Peoria St.
E. B. Bennett, *Manager*
St. Louis—405a Benoist Bldg.
B. P. Temmeyer, *Manager*
Kansas City—
W. R. McDonald, *Agent*
New Orleans—
Jno. R. Todd & Bro., *Agents*
Dallas—Jack H. Frost,
Agent for State of Texas

Eagle White Lead Co., Cincinnati, Ohio

Digitized by Google

The Hub

Copyright, 1908, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. L. NEW YORK, SEPTEMBER, 1908. No. 6.

THE TRADE NEWS PUBLISHING CO. OF N. Y.
Publishers of THE HUB

J. H. Wright, *President.* G. A. Tanner, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

Jacob H. Klein, *Technical Editor.*

REPRESENTATIVES:

J. Henry Klune. J. G. Tanner. B. H. Hull.

The Hub is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of Trade News Publishing Co.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

France.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

Germany.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

England.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

Antomobile Accessories at Chicago.

It is the most natural thing in the world for the carriage builders to welcome the display of automobile accessories at their exhibition of parts, to be held in Chicago, October 11-17, under the auspices of the national association. The suggestion is by no means new. Suggestions looking to this action were made one, two, three years ago, and it was recognized then that it was only a question of time for carriage and automobile accessories to appear under the same management and under the same roof. It was the carriage builders who originated the idea of a display of parts, and vast good has come from it. It might even be said the existence of the national association is wrapped up in the exhibition. It draws twenty where the convention proceedings proper draws one. The visitors would rather look at a wheel, hub or gear than listen to some one in the next room talk about them. The automobile accessory people have cordially accepted the invitation extended them to show everything which enters into their construction. They have taken liberal space, and will be on hand with a most complete display. Carriage builders will have the opportunity for the first time to see all the "innards" of the wonderful machine.

It is not going too far to say that this display will have a pronounced influence on the trade. The carriage builders, at first hostile in their suspicions of the great automobile industry, have swung into line and are making the industry contributory to them. They have given style, art and finish to the automobile. They have transformed it from a mere machine to a thing of beauty. Carriage builders are turning out cars, the equal of which it is hard to find. The accessory carriage interests have gone into the manufacturer of supplies and parts of many kinds.

That the carriage builders or many of them are strongly disposed to go further into the automobile industry is evident. The production of chassis and all the various essential parts makes the work one of gathering together. They have been drilled in that in their carriage work. It is an easy and familiar step to the building of an automobile. The coming exhibition will be the largest in the history of the association. One difficulty may arise in the future and that may be the finding of a hall or building large enough to accommodate all who may wish to display their products.

The New York Carriage Show.

The display of carriages at the coming October carriage show in New York City will in all probability be an event of unusual importance in the industry. There has been more or less discussion in years past as to the value, in fact, the need or occasion for this costly gathering of equipages at a central point. The continuance of these exhibitions and the interest manufacturers and dealers take in them is a sufficient answer as to their necessity or value. The catalog is one thing; the reality, the real thing, another. The catalog addresses the mind; the actual vehicle addresses the eye first, the mind next. The eye passes judgment in a sort of way not easy to explain before the mind. A seeming contradiction.

These carriage exhibitions are not only educational, but stimulative. A dealer is a better dealer for attending them. His chosen stock demonstrates it. The manufacturers have learned that while attendance involves big expense, the direct and indirect results warrant it, in having their work placed before the eyes of several hundred dealers who go to see and learn and buy.

Hickory Waste.

Very important indeed is the proposition of hickory interests to cut down the waste one half. It is almost incredible that the shops have been wasting one half of this scarce and valuable wood but the proposition to take steps to save one half the waste which has been permitted certainly looks as if extreme carelessness and indifference has prevailed. This saving we are told is to be accomplished through planning and study. The association in charge of the conservation of hickory resources has a committee of thoroughly practical men to do what can be done to reduce waste.

Wasteful habits of any kind are most difficult to eradicate. Machinery itself, the great saver that it is, is also a great waster. Waste is a peculiar term. Nothing is waste under this broad definition, unless it pays to save it. At last it happens that it pays to save hickory, therefore waste is to be arrested. There was no waste as

Digitized by Google

long as there was no loss in monev. The American people are wasting in every direction simply because it does not pay to save. This is a wrong and vicious idea. Waste is waste no matter whether it is accompanied by a loss in money or not.

The committee has a big work in hand. Methods of manufacture are pursued which create waste but which are not so regarded. Habits and methods of manufacture will have to be overhauled. Instruction will be necessary and much of it. The mechanic will have to be reached and enlightened and a constant supervisory influence maintained before waste can be reduced. No circular letter or resolution will answer.

Light Trucks Coming.

The increasing output of light commercial trucks is indicative of the development of the vehicle industry in an unexpected quarter. Builders of the heavier type of truck which is in most demand have encountered evidences of a demand for lighter types. The original idea of a commercial truck was that it should carry heavy loads and all thought and constructional effort were directed to the production of large wagons that would meet the requirements. Certain builders who succeeded in the building of large trucks later decided to meet the increasing requests for a lighter truck suitable for a large class of merchants and manufacturers who had only moderate loads to transport. The business has not assumed large proportions as yet, but the output which is moderate, sells readily and the service is satisfactory. There is a large field for a truck which might be regarded as a vehicle half way between a delivery wagon and a heavy truck. This field it is understood is to be vigorously cultivated. It offers wider possibilities, in fact, than the heavier truck, in that the number of possible users is very much larger. The cost has been reduced more in proportion than the cost of heavy trucks and the users are generally satisfied with the character and cost of service rendered by the fair sprinkling of light commercial trucks now in use especially in larger western cities.

Plan to Defray Expenses.

There are those who in addition to revising the methods for collecting the cash for the entertainment of the C. B. N. A. would also be pleased to see a limit placed upon banquet outlays. But this sentiment is scattered. The disposition is to go to the limit and make a good time for all concerned. Banquets have their functions and purposes and nothing can take their place. Liberality and good fellowship is as natural to the accesory manufacturers as it is to breathe. They have always shown good fellowship when dollars were concerned, and outside of dollars.

It is to be hoped the new plan of defraying expenses will be cordially accepted and carried out in its spirit.

Knowledge of Drafts and Drafting.

The indirect benefits to the carriage industry from the greater spread of a knowledge of drafting among body workmen and others engaged in construction work lies in the fact that workmen can work from plans understandingly. In olden times, in fact, not so many years back, plans were looked upon by many advanced workmen as a sort of school boy affair with which the "practical" carriage builder need have very little if anything to do. This view of things has changed. The importance and value of technique is more generally recognized and all shop work now feels the benefit of working from drafts which can be readily understood. They save time; they give point to effort; work is done in less time and when done is right. The various branches and sub branches of constructional work operate in harmony. Mutual confidence is developed and the level of shop intelligence is raised.

It is not necessary that every mechanic should be able to execute a draft, but where they know enough to be able to work from one, shop efficiency in the expressed opinion of a few of our progressive carriage builders is raised and invisible economics are realized and there is an instinctive co-operation of effort, the lack of which is an element of weakness in our best managed carriage factories.

This recognition of the value of drafting intelligence among woodworkers emphasizes the importance of the good work done by our technical school in its correspondence classes. Knowledge is power, as an ancient philosopher declared, and a knowledge of fundamental principles of drafting is a power in the carriage shop that observant builders are now recognizing.

Aluminum.

Notwithstanding the recognized advantages of aluminum in carriage construction, its use gains slowly. It it natural for a woodworker to prefer wood as it is for a metal worker to prefer metal. With all the conceded advantages of aluminum for its lightness, durability, absence of splintering and warping, and the advantage of aluminum, when properly prepared, for holding paint, the skill of the woodworker is such that he drowns out the advantages of aluminum as a necessity.

For all that aluminum has its advocates and friends, and its use will increase in a class of work which does not fill our shops with rush orders. The American carriage builder feels he has already done enough in the way of reducing the weight of carriages without using aluminum purely for that purpose. Aluminum will probably be increasingly used on fine work, but for other considerations than that of lightness.

Wagons.

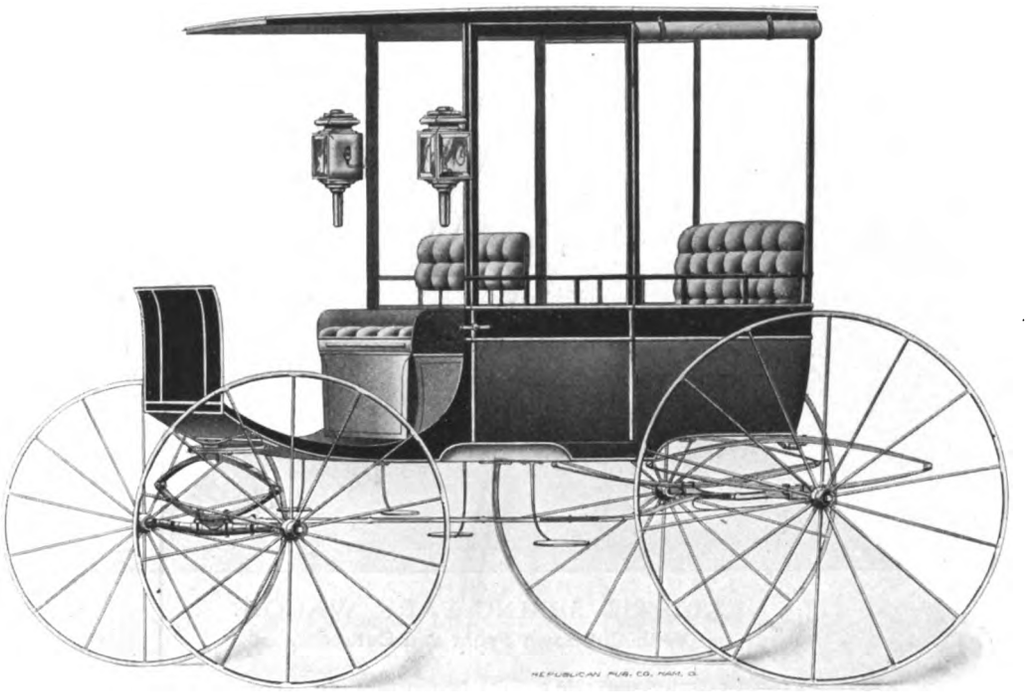
Carriage desiging relates to style and appearance. Wagon designing relates to utility. A new form of utility in wagon designing lies in adapting wagons to specific uses and services. Wagons to-day are constructed for an hundred and one specific purposes. The wagon is designed for the work. Each kind of work calls for some modified form of construction. Therein lies one of the many opportunities of the wagon builder. New wagon requirements are constantly coming up. When the railroad contractor appeared the contractor's wagon and dump wagon appeared. Necessities are rapidly differentiating. Kinds of work to be done by wagons are multiplying. Hence wagon building is becoming something of a science, and it is being divided up into as many specialties and departments as there are kinds of work to be done.

C. H. A. T.

The beefsteak dinner of the C. H. A. T., Oct. 8th. in New York, will be quite an event. This is an organization of genuine strength and real harmony. It represents a high type of men who have been successful in their chosen callings. The attendance, it is understood, will be exceptionally large. There is a spirit of brotherhood manifested which is not always found among organizations of business men. Their influence is for good, and they enjoy the hearty good will of their employers.

Digitized by Google

Illustrated Carriage Section, September, 1908



SHORT TURN CURTAIN DEPOT WAGON.
Built by Morris Woodhull Co., Dayton, Ohio.



GROCER'S PLATFORM DELIVERY WAGON.
In Recent New York Work Horse Parade.

Digitized by Google

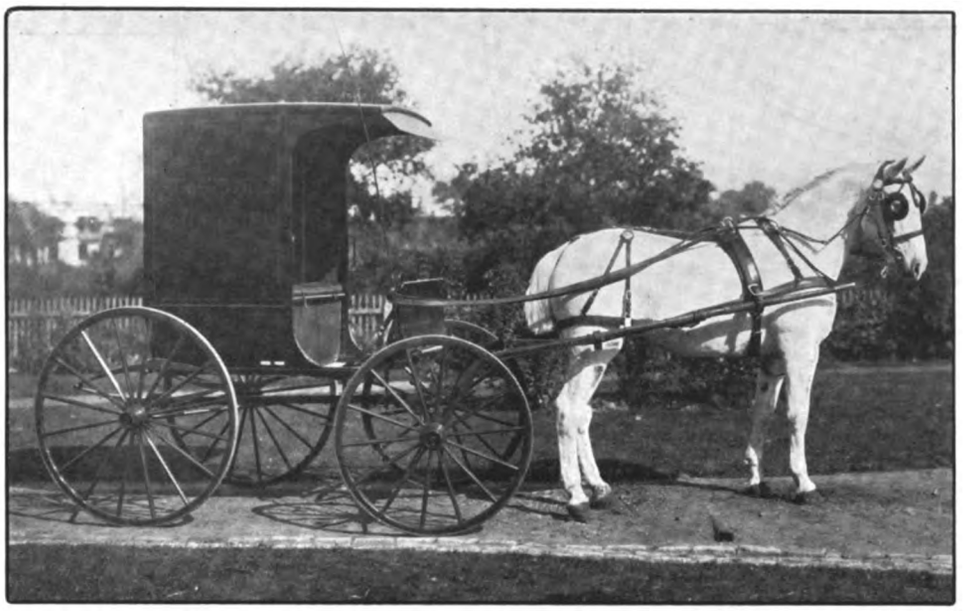


ELLIPTIC SPRING PARK WAGON.
With Cut-down Front and Cutunder.



SIDE BAR SPEEDING WAGON.
With Top and Spindle Seat.

Digitized by Google

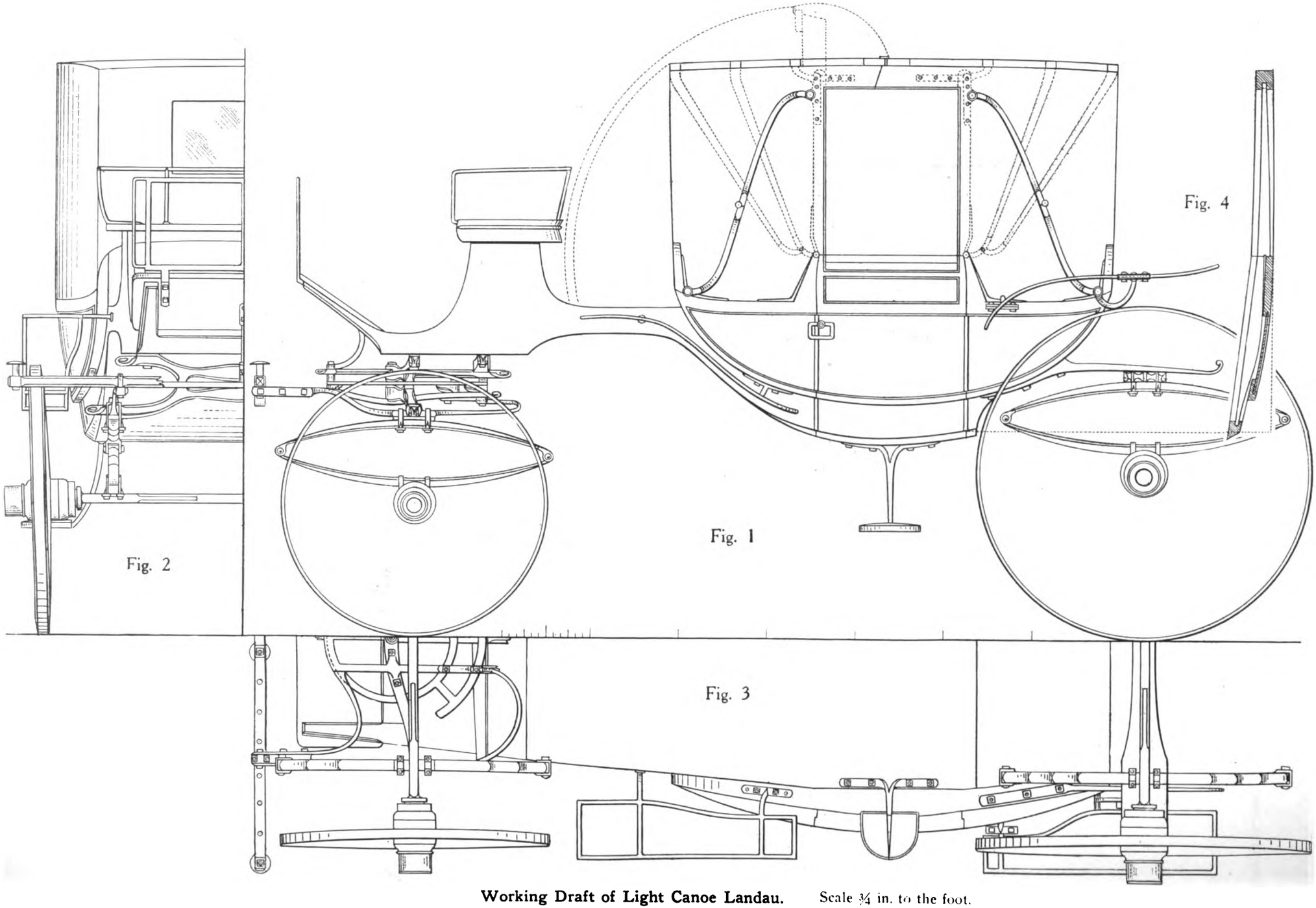


COLLECTOR'S THREE-SPRING WAGON.
Also Good for Light Delivery Purposes.



PHILADELPHIA FURNITURE TRUCK.
With Open Side and Built-up Top.

Digitized by Google



Working Draft of Light Canoe Landau. Scale ¾ in. to the foot.

Description on opposite page.

Digitized by Google

Wood-working and Smithing

DESCRIPTION OF WORKING DRAFT OF A LIGHT CANOE LANDAU.

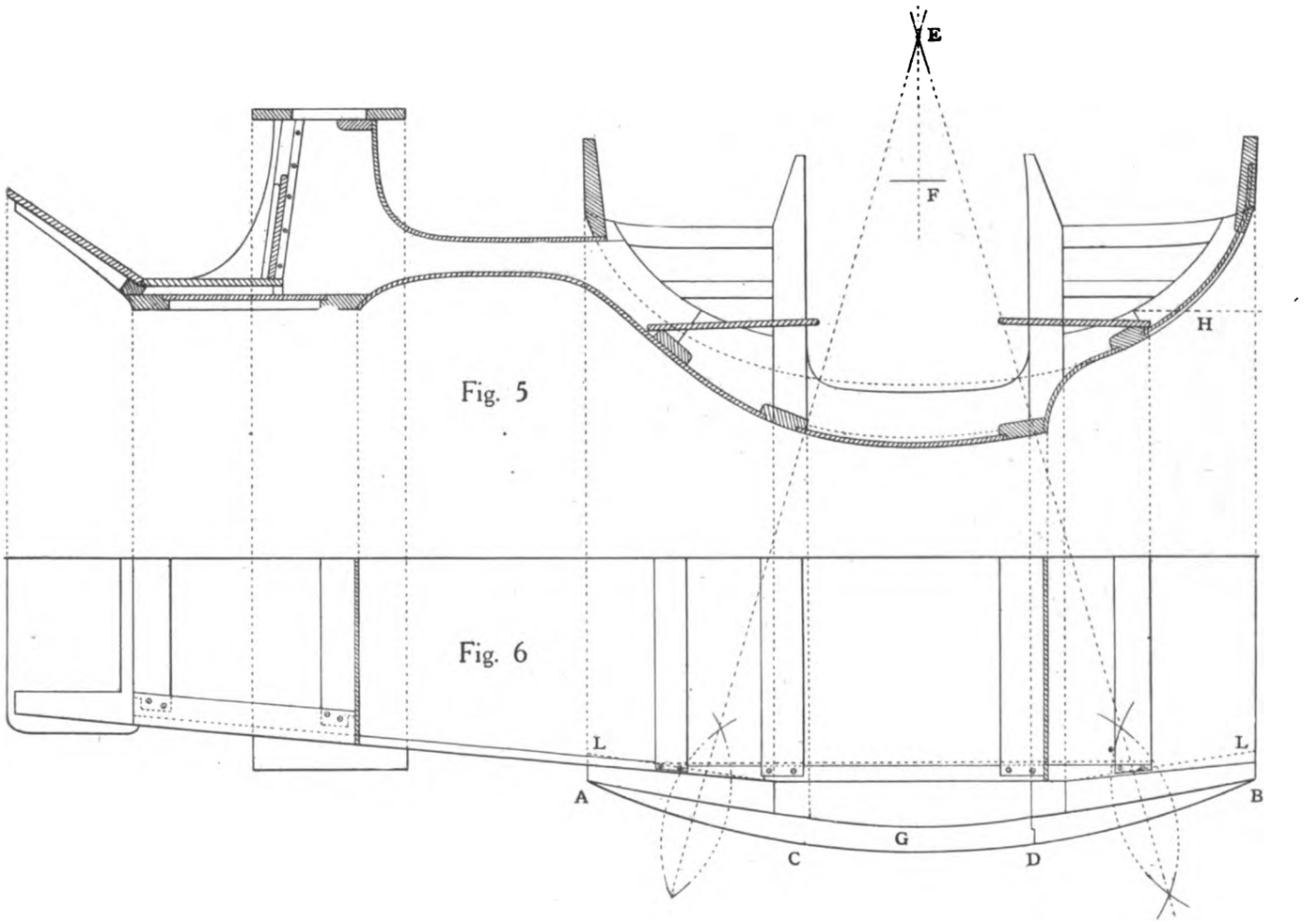
Drawings on this and preceding pages.

In the race of nations for the world's favors individuality is the product of community. The man with a fixed idea becomes the sentinel of his own narrow environment, and thus arrests his development; the full life is nurtured in the battle and conflict with others. And as nationality is refined in the crucible of cosmopolitanism, so are manufactures perfected by rivalry and inter-communion and comparison.

Whatever the design of a carriage may be that becomes native inventiveness to expect a general standard in design, and be parallel to the recluse in his narrowness and angularity, and place a general embargo upon originality and healthy progress to think of exacting such a condition.

The design we give in the working draft herewith is of light proportions, yet with an amount of roominess quite consistent with all that is desirable in its seating comfort, such as leg and head room and restful support of the occupant's body against the squabbing.

The lines of the body are quickened from the elbow point down to a faint belly line at the doorway. In this design of body it is difficult to get a depth of leg room; if the quarters are



Body Draft of Light Canoe Landau.

Described on this page.

tionalized, it has received its individuality and perfected lines through community. For though the landau is of German origin—being named after the German town of Landau—yet, like genius, it has no nationality, having from its lines of beauty, together with its usefulness in forming a closed and open carriage, become the common property of the civilized nations of the world.

Though each country produces distinct types in design and construction, still there is the atomical point, or the unit lines, as perfected to the credit of the German designer of Landau. It would be asking for the impossible and a sterilization of creafaint, and follow the true arc of a circle, the boat lines, as shown in our draft, are of varied curves, which are more soothing than the arbitrary line of a circle.

The elbows are quickened at their extreme points, while their bottom line is a faint curve to balance the effect of an apparent straight line, which gives harmony and consistency in outline, elements which must always be present in a good and cultured design.

The lines of the rocker and recess of boot are in harmony with the body, while the front and neck curve of top of boot balance themselves to the general outline of the body's design.

Digitized by Google

The front wings are lined to harmonize with the bottom side and rocker lines, while the hind wings are return double curved, and thus symmetrize with the wheel and body lines. The head side joints are also made in reverse curves at their extremes, which blend finely with the design. It is in these apparently small or little things where true consistency in harmony is so often wanting, as prominent parts catching the eye, and quickening themselves on the senses of the viewer, to the detriment or advantage of the design as pictured to the buyer.

The design as shown in the working draft is of medium size, being 5 ft. on the elbow line of the body, and though it is a light landau, yet it is spacious enough to carry with compact comfort the same number of occupants as a full double carriage of the same type.

But though lightness has its advantages, it has also its disadvantages. There is a mien of nobility in a heavy double carriage that dwarfs lightness, and, as it were, relegates it to a minor position in the elegances of carriage manufacture.

There is also another disadvantage from which light carriages suffer, and that is they do not run so firmly as a heavy carriage, for it is quite possible for a light vehicle to be much heavier in draught, and fatigue a horse much more than one weighing more in actual weight. On a light carriage attaining a certain speed, gravity loses its firm hold upon it, and the wheels skid and slide, instead of rolling on solidly in the direction of their course.

In the case of a heavy carriage, by which is meant a full double landau, or similar vehicle, a high speed can be attained,

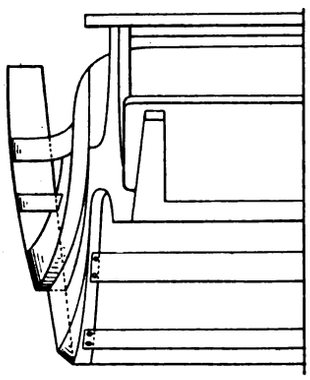


Fig. 7

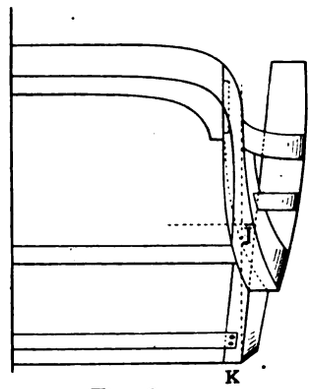


Fig. 8

or a speed consistent with pair horse driving in comfort. On such a carriage, gravity acts with a pull sufficiently firm to admit of a good rolling speed, without skidding or sliding on the wheels being set up. The balance of the weight on the points of suspension may be firmer, and the rhythm of the springs motion in better time than can be got out of a lightly built and suspended carriage, but in the matter of draught weight has its advantages.

Fig. 1 gives the full elevation of the design, and shows all the points of fixing. The hanging is on full elliptic springs, and the front under gearing is made with double transom wheel bearing. The hind body wings are forged with feet, to take corresponding stay feet, which are forged to the hind props stay and to the hind standing pillar head hinge corner plate. These feet are bolted together and make a first-class job of the fixing.

The front wing is made with foot to take the body bottomside, while a spindle stay is forged in the front part of the frame long enough to collar against the boot side; a bolt end is forged sufficiently long to go through the side and body plate, and screw up on the inside. This method makes both a clean and a good job, while it is a simple way to fit up a wing to a carriage of this kind.

The pump handles are made with solid flaps on the inside to take the hind springs. A cross bar is used instead of a block, which is a smarter method in high class work, though it is of ancient usage in the back suspension of these carriages.

The sizes for building are: Length of body on elbow points, 5 ft.; length of hind quarter on elbow, 20 in.; width of door, 20½ in.; length of front quarter on elbow, 19½ in.; depth of hind quarter from bottom of waist line over bottomside moulding, 11½ in.; front, 11½ in.; depth of rocker on door line, 4½ in. on each side.

Length of boot from front elbow to point of bracket, 4 ft. 2½ in.; depth of side, 17 in.; width across top of same, 9 in.; width of seat, 14 in. by 38 in.; length of front bottomside, 20 in.; length of bracket, 14 in.; distance from line of front of head to back of boot at seat, 18 in.; depth across neck of boot, 3¾ in.; depth of same at foot board, 3 in.

Width of body at back on elbow points, 40 in.; across front of same, 40 in.; width across standing pillars, 5½ in.; width across boot at elbow points, 37 in.; across point of bracket, 28 in.; width on seats, 42 in.; depth from top of seat to roof slat, 42 in.; width of back seat, 14 in.; front same, 15 in.; bevel on bottom of rocker line, 1 in.

Height of hind wheel, 46 in.; spokes, 1½ in.; tires, India rubber, 1¼ in.; other sizes to standard. Height of front wheels, 37 in.; spokes, 1½ in.; tires, India rubber, 1¼ in. Length of Collinge axles over collars, 46 in.; hind ditto over solid flaps. 39 in.; size of ditto, 1½ in. by 5½ in. Width across front axle flaps, 37 in. Axles 1¼ in.; length of boxes, 8¾ in.

Length of hind springs, 38 in. to centers; number of plates, five; width of plates, 1½ in.; compass over all, 10 in. Length of front springs, 37 in. to center; number of plates, five; width of same, 1½ in.; compass over all, 9 in.

Depth over under carriage beds, 8½ in.; diameters of transom wheel plates, for double bearing, 18 in. and 26 in.; length of splinter bar, 5 ft. 4 in.; height of step from ground, 15½ in.; height of front boot bottomside from ground, 39 in.; height of body from ground at rocker, on center of doorway, 26½ in.

Fig. 1 presents the side elevation of landau complete; Fig. 2, half front view; Fig. 3, half plan of body and under works; Fig. 4, turnunder pillar, showing glass runs and framing parts set off; Fig. 5, inside elevation of body, showing the framing and the position of seats and cross bars. Fig. 5 shows the half plan of body, from which the lines of construction are got by the body maker. It is in a body of this design where the striking advantage of technical instruction shows itself, because the design of the body, and its construction partake more directly of the cone than any other carriage body.

Let the points A B be the width of the body at back and front elbow points, and C D the width across the standing and shutting pillars, and bisect the points A C and D B and carry the lines up until they cut at point E, which will give the radius for the base line of the body. Now, as the body is an inverted cone, so far as its rounding surface lines are correctly produced, the turnunder sweep on the door line, is not got by the amount of the turnunder of the standing pillar, which would hardly be perceptible as a fullness to the base sweep of the body on the elbow line. If a body is made, as many are, to this sweep, the sweep along the doorway will be flat, and appear flatter than the elbow sweep, so that such body making in Conde landau is entirely wrong.

The turnunder side sweep should therefore be struck off inwards, from a depth of the quarter as from E to F, which is the depth of the quarter on the pillar line. Therefore, to get the correct sweep, point F is the center and the point of turnunder on the plan; the radius G gives the quickened curve and the correct contour sweep of the body on the side at this part. This is due to the body being a conic section, and the explanation shows how the lines are found.

But there is still a further point in the construction of this body which must be fully explained in dealing with the plan. The body is built with the rockers pitched at an angle outward in line with the pillars. Now unless the bottom sides on the plan are thrown round beyond the square position of the plan, as shown in Fig. 6, the elbow line sweeps will be short that distance at the pillars when framed, and the body will consequently be narrower this amount across the elbow tops.

Digitized by Google

Therefore to find this correct angle of the bottomside, draw a horizontal line from the rockers joint, as on the line H, projected from the body in Fig. 5 to J, Fig. 8. Then from the inside of the pillar at point K. Fig. 8, draw a vertical line until it cuts the horizontal dotted line J, and the distance of the line K from the pillar J is the amount the bottomsides must be thrown round on the plan for the side sweep to come true to the elbow line. The joint of the rocker to the boot is at the same level as the hind joint; the angles of the bottomside are therefore equal in their pitch round, which is shown in the plan at LL by dotted lines.

This is a matter that requires study, because the surface of the back of the bottomside must be dressed with the horizontal to this acquired angle, so that it stands square across when the body is framed up in position.

It must also be quite understood that the plan in this body must be drawn out perfectly square—that the contraction line of the boot must run to the angle of the bottomside; and that the extra angle of the bottomsides is entirely independent of the plan shown in the square flat and is, solely in consequence of the construction of the body with the rockers, at an angle, instead of being square up, which was the method forty years ago, and is still used by some builders in making landau bodies of this type. Fig. 7 shows the half front of the body, from which the cross measurements can all be taken, and the position of the boot.

Fig. 8 shows the half back view, from which the cross measurements of the body can be taken, also shows the sweep curve for the back panel groove.

RESULT OF TEST ON DRAFT OF WAGONS FITTED WITH HIGH AND LOW WHEELS.

Which run the easier—other things being equal—high or low wheels? Until some time after the advent of the bicycle, or about the time of the so-called "safety" wheel, it was generally admitted that high wheels ran easier. The old-fashioned trotting sulky had unusually high wheels; this was also the case with the cart for heavy loads. But when the safety bicycle came into use, tests proved that it could be pushed more miles and up steeper grades than the high wheels. It was thought by some that this was due to the gear of the safety wheel in comparison with the direct drive of the high wheel, but this could be easily disproved. So when the automobile came into use its wheels were soon made but 28 or 30 inches high. Soon after this, bicycle wheels were adopted for the trotting sulky, and from that time the old notion that high wheels ran easier than low ones seems to have lost ground.

But now comes the Missouri agricultural station, with some practical tests on that very point, and it appears that for the same load a wagon with wheels of standard height drew lighter than those with lower wheels. The difference in favor of the standard wheels was greater on roads in bad condition than on good road surface. Low wheels cut deeper ruts than those of standard height. The vibration of the tongue is greater in wagons with low wheels.

Yet for most purposes wagons with low wheels are more convenient than those of standard height. It was also found that diminishing the height of a wheel from 40 to 30 inches in front and 50 to 44 inches in the rear did not increase the draft in as great proportion as it increased the convenience of loading and unloading the ordinary farm freight. Diminishing the height of wheels below 30 inches in front and 40 inches in the rear increased the draft in greater proportion than it gained in convenience. On good roads, increasing the length of rear axle, so that the front and rear wheels ran in different tracks to avoid cutting ruts, did not increase draft. The best form of farm wagon is one with axles of equal length, broad tires, and wheels 30 to 36 inches high in front and 40 to 44 inches behind.

Experiments also show that the draft on gravel roads, for a ton on high wheels, 44-inch front wheels and 56-inch hind wheels, was 84.5 pounds, while on low wheels, 24-inch front wheels and 28-inch hind wheels, the draft was 110.2 pounds.

On a dirt road, frozen, the draft was 100.6 pounds on the high wheels, and 139.1 pounds on the low wheels.

On blue grass sod the draft was 131.9 pounds on the high wheels and 178.8 pounds on the low wheels.

On plowed ground the draft was 252,5 pounds on high wheels and 373.5 pounds on the low wheels.

The cause of the increase in draft of the low wheels on soft ground is, of course, due to the fact that they sink in deeper. In going over an obstruction it is easily seen that the low wheel offers greater resistance.

But nothing has been stated about the relative cost of low and high wheels. Of course, the side strain on a 40-inch wheel is two or three times greater than on a 30-inch wheel, and the large wheel must be built far heavier than the small one—possibly twice as heavy to equal its strength.—Blacksmith and Wheelwright.

HANDLING OF STOCK IN FACTORIES.

There is one factor in most shops which is either sadly neglected or has not received its proper proportion of consideration and improvement, and that is the factory truck. This medium of transferring stock, in nearly every plant, is often lacking in quality and nearly always in quantity.

The principal defect in quality is in the running gear or bearings. The rough iron from which they are made is often poorly machined and takes a long time to get worn down to a smooth bearing. I have seen new trucks run so hard that it was all one wanted to do to push one empty. Wouldn't it be cheaper to have all bearings properly fitted before they are used, than to try and wear them down by friction through use?

Frequently the bearings are too small for the amount of work they have to do. I have seen two men try to run a truck load of stock which should be run easily by one man, and I have also seen truck loads which took four men to move, when two should have done the work. What does this extra work resulting from poor trucks cost? I haven't figures to give, but in my humble opinion, formed through study of the question, I am impressed with the fact that the truck has been sadly neglected and that there is good money lost right here.

When one goes to buy a buggy he looks for one that is well built and easy running, so that it won't work his horse down too much. A man isn't a horse and one doesn't have to buy him. It is only necessary to pay him his day's wages and when he is gone there are two more ready to take his place. Yes, but you have often had to use two men when one would have done the work under proper conditions with an easy running truck.

I know of a shop that built rubber-tired factory trucks for the market, but cannot say how many it sold. But that luxury can be easily dispensed with, writes T. S. Johnson in the Wood Worker. The ball bearings however, would come in nicely and be a dividend raiser, I am inclined to believe. There is one place where they truck 180 table tops regularly at a load, weighing 17-lbs. each, or a total of 3,060-lbs. A ton and a half is a pretty fair load for two men to handle on a truck. If it were loose hay you would certainly think so, but oak stock doesn't make as big a pile and one doesn't notice it. Shops with the most improved machinery and that pride themselves with the fact that they have the latest and best of everything, are often found with trucks that do not compare with the rest of the plant.

When buying trucks or having them made, a little extra metal and work on the bearings may save a great deal of extra labor later. But, some one says, we have 500 trucks in our plant, and a little extra cost on each one means a large sum at the total. Yes, but the fact that you need so many is sufficient reason why you should have them all first-class, and affords all

Digitized by Google

the better chance for a large saving. Forget the first cost and look only at results.

Some of the trucks now built are very good and will handle the general run of stock in fair shape, but to handle the loads referred to above, every day, would give them rather hard service and might result in a broken wheel or a load upset more frequently than would be pleasant. I speak from experience, not theory. Knowing that the truck question is a vital one, I maintain that it should have the consideration its importance justly demands, but so rarely gets.

What does it cost to handle stock in the shop? As regards some classes of work, it is reported that one handling means a profit, while two handlings mean a loss. This being the case why not have facilities for handling stock at a minimum cost?

NEW ZEALAND HARDWOODS MAY PROVE GOOD SUBSTITUTES.

Far-off New Zealand is the latest country to which forest experts have turned in seeking substitutes for the valuable American woods used by the furniture, cooperage, implement and similiar wood-using industries.

Seven different New Zealand hardwood trees have just been put through a series of tests by the United States Forest Service in co-operation with the University of California in the timber testing laboratory at Berkeley. The trees showed up remarkably well in comparison with white oak, which is one of the strongest woods in the United States.

Four of the seven New Zealand woods tested developed a bending strength even greater than white oak and three of the woods showed a greater crushing strength. The New Zealand woods found to have a bending strength as high or higher than oak were the Black Maire, Matai, Puriri, and silver pine, while the first three of these have in addition developed a greater crushing strength than oak.

These strength tests of seven of New Zealand's most valuable timbers may prove of the greatest benefit to certain American manufacturing interests if experiment shows that the woods can be introduced into this country and planted with the same success as the eucalypts of New Zealand and Australia or if it is found that the islands have enough of the various species to import a little to this country.

PATENT SYSTEMS IN AMERICA AND EUROPE.

Our own patent system will be better understood by a brief comparison with some of the pricipal foreign systems. In America the Patent Office makes a careful examination before granting the patent to see that patents are granted only for novel inventions and that the claims are restricted to a monoply to which the inventor is justly entitled. Thus our patents have a prima facie validity. France, on the other hand, makes no examination before granting a patent, and requires no claims. England has just only begun to make preliminary examinations. Germany subjects applications for patents to a very rigid examination. The United States requires no taxes of the patentee after his patent is granted, as the price of keeping his patent in force for the seventeen years. England, on the contrary, requires taxes paid annually after the fourth year, and Germany and France require annual taxes. The United States does not require the patentee to put his invention into commercial use, but France and Germany absolutely require it, and England will invalidate a patent for an invention which is manufactured chiefly abroad but only slightly or not at all in England. In the United States any of the defenses to a patent can be raised in answer to a suit for infringement, and that at any time during the life of the patent. In Germany the only answer to a suit for infringement is a denial of the charge of infringement. If the validity of the patent is to be attacked, it must be by a separate suit for annulment, and such a suit can only be brought during the first five years of the patent. Therefore, after a German patent is five years old, it is conclusively presumed to be valid. In the United States, if one claim of a patent having several claims is proven invalid, that does not affect the standing of other claims. In England, however, if one claim is proven invalid, the entire patent falls.—Edwin J. Prindle, in American Industries.

HOW SANDPAPER IS MADE.

Sandpaper, or, more generally speaking, glasspaper, is the chief abrading material used in woodworking, and consists of strong paper coated with powdered glass. In the manufacture of glasspaper, first the glass is washed and sorted, and then broken very fine by stamps of other machinery. The glass chiefly used for best glasspaper is that from old port wine and stout bottles; this, when pulverized, is of a golden color. The different grades of glasspaper are numbered from 3 to 0, and even finer, and there are corresponding sieves to divide the various grades, or to "size," as it is technically called. These sieves are numbered from 140 to 30, the numbers representing the number of meshes per lineal inch; the finer sieves are covered with Swiss silk, the remainder with woven wire. In this part of the process considerable care must be exercised, as one large particle of glass on a sheet of fine paper would scratch the work upon which it was used and would produce an uneven surface.

The placing of the glass on paper requires considerable skill and experience. The workman has delivered to him plain paper in reams of 120 sheets, each sheet making four sheets of ordinary size. The appliances used are a copper tank holding 56 pounds of glue, a table, a bench on which the sheets are laid to cover them with a cutting machine and a press for packing and tying glass, a hot plate for firing the sheets, a drying room, up.

A ream or two of paper is placed on the table, and the top sheet is coated with glue by means of a brush resembling a shoe brush, but with longer hair. The sheet is lifted by two corners and laid on the bench, glue side uppermost; the bench has a border standing up some seven or eight inches high on three sides, with a narrow fillet in front. Powdered glass is simply thrown or scraped over the sheet, which then is raised from one side so that the superfluous glass runs off on to the bench and is used again. The sheet is then placed on the hot plate, a hollow, flat, iron bench heated with steam; this causes the glue to boil up and thus securely fix the particles of glass on the paper. All this is done much more quickly than it can be described.

After drying, the sheets are cut up and arranged in quires and reams ready for the market. Glasspaper has entirely replaced the old-fashioned sandpaper; this was made in the same way as glasspaper except that sharp fine sand instead of glass was used. Custom, however, has perpetuated the name of sandpaper, and we hear but seldom the name "glasspaper."—Woodworkers' Review.

VELIE CARRIAGE COMPANY TO MAKE MOTOR BUGGIES.

The Velie Carriage Company, of Davenport, Ia., will shortly begin the manufacture of motor buggies.

The machine which they contemplate manufacturing will be graceful and stylish appearing and will have lower wheels than many now on the market. The first machine will be turned out sometime during the winter.

NEW PREMISES IN NEW YORK FOR GOODRICH.

The B. F. Goodrich Co. have purchased property in New York, upon which they purpose erecting a large building for the purposes of their branch in this city. The purchase was made from the Marsh estate, and embraces Nos. 1776-1778 Broadway, at Fifty-seventh street.

Digitized by Google

PAINTING AND UPHOLSTERING

AUTUMN DAYS AND THEIR EFFECT UPON THE PAINT SHOP.

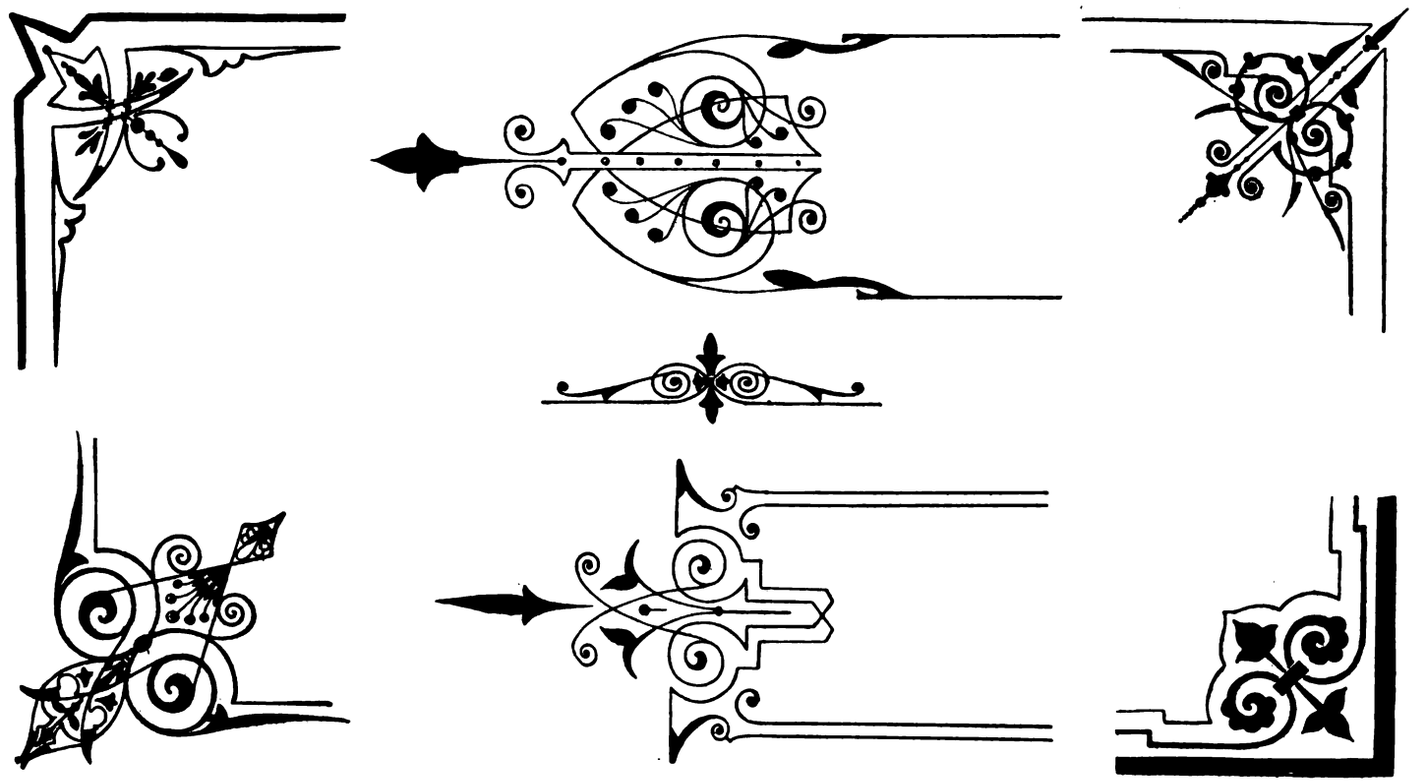
While autumn days are pleasant and full of charm they are nevertheless days to be carefully watched by the carriage painter.

They are changeable days, and should the painter be caught in a state of unpreparedness trouble of various sorts are more than likely to ensue.

Autumn days mean, very often, bright and promising mornings and afternoons afflicted with weather running all the way from bad to worse.

This being so, the paint shop should be kept in order to meet all weather emergencies. Windows may well be looked after, and not only cleaned but tightened up to resist the winds and the storms alike. It is easier to fix a window or two, or more, than to remedy a case of varnish gone wrong on account of some mishap due to a rickety or improperly fastened or adjusted window. Clean windows inviting all possible light are desirable during many dark autumn days.

So, too, should the stove, or whatever heating device is operated in the paint shop, be attended to and made in the highest degree serviceable. As a matter of fact, the paint shop should be put in condition to meet every requirement imposed upon it by the fickle temperment of autumn.



Striping Suggestions for Corners and Ends of Panels.

WASHING THE CARRIAGE.

Considered from the layman's standpoint the painter can have little immediate concern with the above subject. From the view point of the man in the shop, however, the subject is one which appeals to him strongly as a matter of business. The painter finds it profitable, as we may well believe, to exexercise the liveliest interest in any work of his creation during its life of service upon the road. If a proud brilliancy and resolute durability in general be maintained to the maximum limit the painter is fairly certain to profit thereby. Such work arouses the confidence of the carriage owner to be possessed of which is to the painter great gain.

Hence reason and policy are alike urgent in prompting the painter to interest himself in everything likely to maintain the charm and fine looks of his work.

Washing the carriage is one of the things by which the carriage surface stands or falls. In view of which he may well formulate a code of directions for the guidance of those charged with the washing and cleaning of the carriage. First of all, he should direct that the carriage be washed in a location protected from the direct rays of the sun.

Clean water should always be provided, and the softer the better. Alkaline water is naturally harsh in its effect upon varnish.

Soft-wood sponges are essential.

So too, are soft, pliable, free from lint, wash leathers.

Galvanized iron pails, 12 quarts capacity, are needed. They will wear longer and may be kept cleaner than wooden ones.

Hose and hose connections are convenient, and facilitate the washing, but they are not absolutely necessary.

Modus Operandi.

Either with the use of hose or sponge permit a gentle flow of water to first soften up the surface accumulations. Then increase the flow of water and, if needed, assist removal of the accumulations with the sponge saturated with water. Do not under any circumstances attempt to force the accumulations off

Digitized by Google

by hard pressure of the sponges. A light pressure and an easy flow of water will clean the surface without injury to the varnish. Follow with a free saturation of the surface with a clean supply of water, but abstain from rubbing the varnish with the sponge, except with an exceeding lightness of touch to accelerate the movement of the accumulations.

Never use the hose under a heavy pressure of water to clean the surface. Varnish is not made to stand the strain imposed.

Do not permit mud or related surface accumulations to harden upon the varnish if prevention be possible.

Wash the carriage immediately upon its return from service if mud has collected upon the surface. Mud allowed to dry upon the surface will in the very process of drying extract a certain amount of virtue from the varnish. City streets' mud by reason of the greater amount of ammonia it contains is more injurious to varnish than the mud of country roads, barring, of course, the mud of lime districts.

Frequent washing of the carriage under the conditions and in conformity with the processes above noted will prove beneficial to the varnish. Newly applied varnish thrives under frequent water baths properly administered.

COLOR UNIFORMITY.

A color for carriages, either horse or horseless, should have unmistakable brilliancy. Color devoid of this property, however excellent it may be in other respects, cannot be classed as excellent. Vehicles are to-day painted without much ornamentation so that the very plainness of the surface demands that color brilliancy be given a large importance in the sum of paint shop necessities. But color brilliancy without requisite fineness —that is, impalpable fineness—gives the pigment a secondary rating. There can be no superior finish for the surface when the color atoms are coarse. The finer the color particles the closer they will lay upon the surface, and, except in the case of transparent pigments, the better the covering qualities. Some of the high class ivory blacks are, while ground as fine as modern machinery is capable of, poor covering colors, on account of a certain transparent property which they possess. Generally speaking, however, finely ground pigments are good covering ones. Added to these virtues the color should have excellent working properties. Working properties come quite as much, it must be understood, from thorough thinning and mixing processes as from inherent qualities of the pigment. When a color is dipped or pressed from the can, as received from the shipper, and is at once submerged under a great supply of turpentine, the thinning cannot well be otherwise than imperfect and defective. Under such methods it will lack smoothness, uniform consistency, and strength of covering power.

Color should be thinned by adding turpentine gradually, little by little, stirring thoroughly, meanwhile, so that finally the pigment flows free and smooth, and with all the uniform opacity of which it is capable.

Naturally some colors are in themselves gifted with better working properties than others, and when these come under treatment it is necessary that special processes be applied in order that the weak points be developed and, if possible, made strong.

Uniformity of color likewise depends much upon the skill of the workman in applying it to the surface. While mechanical deftness in handling the brush is highly desirable, even indispensible, it cannot be altogether substituted for mental exertion. The really good workman must be a thinker, not merely a possessor of mechanical expertness. The painter to successfully apply color to the surface should be informed as to the proper or exact consistency natural to the best flow and "lay of the pigment. He should, moreover, have a definite knowledge of the covering, coloring, flowing, drying and working properties. Minus this knowledge and his mechanical dexterity counts more often than not for comparatively little.

The skill of handling the brush, and the execution of surface-magic dependent thereon, is a matter of practice gained in the paint shop school of experience. Unattended by the ability to reason and think clearly in respect to all things which relate to the life history of pigments, it cannot successfully contribute to color uniformity.

In these days of great demand for fine surface results in vehicle painting whatsoever things confer shapely proportions and brilliancy of effects upon the color, and the surface of color, are entitled to be sought for diligently.

THE TURPENTINE SUPPLY.

The carriage and wagon and automobile painters are alike interested in anything that pertains to so staple and indispensible an article as turpentine. Pure turpentine, we are told, is becoming increasingly scarce on account of decreased forest area in the Southern turpentine belt, but is is suspected by many competent authorities that the real conditions have been exaggerated for commercial purposes, chief among which, it is charged, is the attempt to market imitation products.

With those manufacturers who are selling turpentine substitutes under their proper label we have no fault to find. Their's is a legitimate business, and buyers under such circumstances need not be deceived. With the people, however, who are selling an adulterated article for pure turpentine, at a pure turpentine price, we take immediate issue and brand them as commercial highwaymen.

Under the modern refinements of preparing turpentine, and turpentine adulterants for market, science and chemistry have united to deceive the painter. The extenders that formerly smelled to Heaven have been so acted upon by processes of chemistry that their smell has been practically eliminated leaving the peculiar and unmistakable odor of real turpentine to guarantee the purity of the sample. Moreover, turpentine is now subjected during manufacture to a refining treatment that virtually removes all discoloring substances so that the test of putting a few drops upon white paper for an evaporation trial is hardly to be relied upon.

About the only reliable test is that to be made with the hydrometer. A sample of spirits registering 31½ per cent. or below 30½ per cent. may well be declined. It is said, of course, that the sophisticators of turpentine are now even able to some extent, at least, to beat the hydrometer, but this instrument is nevertheless the most reliable detector of turpentine impurity. The sense of smell should always be exercised in handling samples of turpentine, for at the present time a comparatively small proportion of adulterated spirits is deodorized and with kerosene and petroleum sophistication practiced to the extent of anywhere from 15 to 25 per cent. in a given sample the odor may be unmistakable.

However, the painter need not, or should not, trust his olfactories too largely in this matter of detecting the good or ill qualities of the turpentine supply, for pitch wood distilled turpentine, which is not infrequently pure turpentine, has a particularly penetrating and fairly overpowering odor, as compared with turpentine distilled from the pitch, instead of the wood.

The writer has made a comparative test of these two brands of turpentine and knows whereof he speaks. It is not to be understood that the wood distilled spirits is to be rated the equal of the pitch distilled product. Color thinned with the former works less freely, and dries very much less quickly than a similar color thinned with the latter.

Pure turpentine is the color or paint thinner par excellence. With it the finest coach color flats out perfectly. Petroleum products added to turpentine cause the color thinned with it to dry slow and uncertainly. Not infequently they give the color a harsh, gritty feeling when it has flatted out on the surface. As a matter of fact, pure turpentine is fairly indispensible to the vehicle painter.

Digitized by Google

DESIGN FOR UPHOLSTERING A DOUBLE BROUGHAM.

Illustrations accompanying.

In designing upholstery the object to be sought is that the result may sooth the senses and please the eye, or rather that the utility of a carriage trimming to fulfill its object must possess these qualifications.

A carriage that is decorated interiorily with a beautiful trimming spells luxury. The work may not be so elaborated as to generate a feeling negative to the impressions which true art makes upon the senses, and thus adversely influence the judgment of prospective buyers, or their tastes in the high finish of ordered work under way to completion.

A rich piece of upholstery should also be shaded with a useful solidity, then utility and art are blended in a strong compact and the resultant effect is sure to be pleasing.

A carriage richly designed and artistically finished is a city set upon a hill—it cannot be hid—for the eye never wearies nor do the senses become dulled by the repetition of a continued association and contact with a vehicle dressed in such pleasant garbing.

As a branch of high culture, trimming takes high rank, because it is upon the successful planning and drafting by the

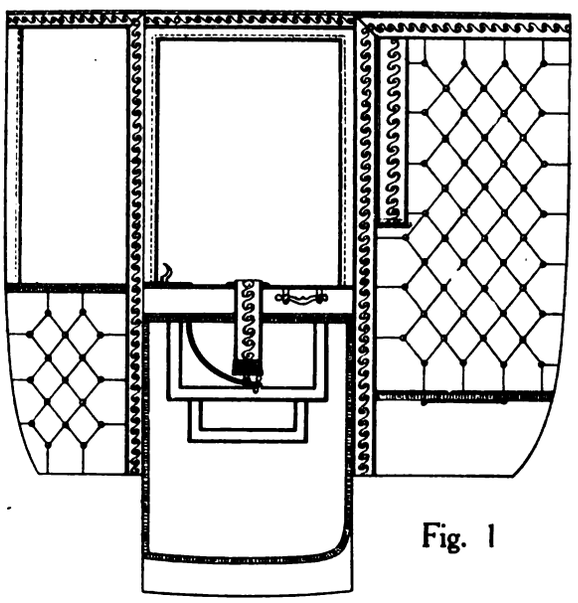


Fig. 1

trimmer of the textile materials which he handles that design is formulated, and a distinctive upholstery produced.

The design shown here for the trimming of a square fronted double brougham follows the style of a progressive London firm. It possesses exclusive features, which, as a whole, will provide food for studious thought in those seeking to adopt new lines worthy of emulation, or to improve their own by a comparison.

The elevation, Fig. 1, shows the hind quarter, top and bottom, the door and front quarter. This method of illustration explains to a workman at a glance what is required of him should he be furnished with a similar draft in the workshop.

The innovations illustrated in Fig. 1 are a full diamond hind top quarter, contrasted with a plain surface bottom quarter, in which a packet is worked as a receptacle for the usual nicknacks.

The holders are shorn of tassels and are left with plain turned-in ends. An improvement in mirror fitting is also effected here. The mirror is fitted to the squab and coyly concealed beneath the line of the holder on each side of the body, and is of course no wider than can be covered by the width of the holder. A mirror can thus be hidden instead of being centered in the top quarter squab, as is the usual way of fixing this highly necessary accessory in the trimming of a brougham. The style in which the door is trimmed is plain squabbing with pockets, which are false. The upper part of door panel is also worked in plain surface panelling and edged with seaming and pasting lace, while the door pillars above the rail are left in the wood, which is rounded over and finished with painted surface.

The front squab is made to match the hind top quarter, the shutting pillar and cant-rail being finished with broad lace and narrow broad lace to match, as is shown over the door line and front roof quarter.

Fig. 2 shows the back and top squabbing in one, the bottom squab is column pleated with gothic and short blockings, as a

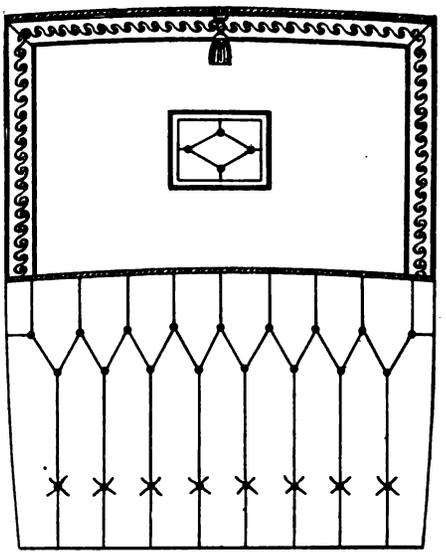


Fig. 2

fringing to the columns; the columns are center, buttoned off to match the depth, the fringe blocking along the top of the squab, the whole making a smart and taking back squab.

The top back squab is finished in plain panel, with back light squab as a relief; the edging to the panel is 2½ in. broad lace, to match the standing pillar, while a centre tassel is fixed to the center of the back roof.

Fig. 3 shows the style of the hind cushion, with broad lace bordering in front.

Fig. 4 shows the front body squab, which is finished in minor diamonding and block columns. The upper columns of squabbing are center buttoned, and a hinge pleat runs horizontally along the top of the squab, which may be made to hinge up the

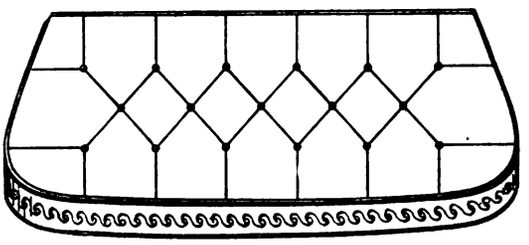


Fig. 3

front seat, Fig. 5, or to hinge under, or the seat may be made to turn up against the squab. This seat is top stuffed, thus forming a cushion and seat in one.

Fig. 6 gives a clear illustration of the design of the front seat in its complete furnishing. A driving box-seat is made the whole length of the regular seat, and webbed, stuffed and covered with cloth. The driving cushion is made with roll borderings on each side; the cushion can be moved to a central position, if desired, so that the coachman has a central position to the horse, and if the carriage is fitted with a foot brake he is in the best position to use it.

The seat fall is made in plain cloth panel, and bordered with 1½ in. broadlace. The valance is made to stand up square, and

Digitized by Google

is welted. The seat rails are covered with enamel leather. The style and covering of the dash is also shown.

From these plain illustrations a trimmer can formulate the

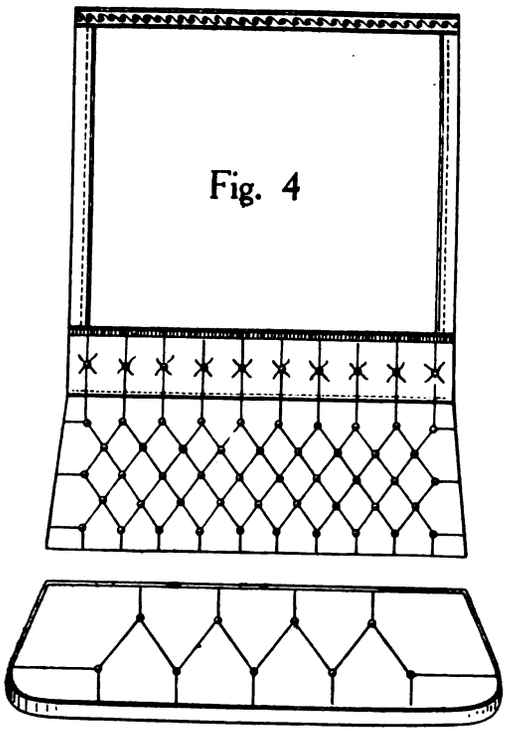


Fig. 4

Fig. 5

upholstery straight ahead, and they will be found of great practical help in making work under way up-to-date, or possibly hitching on a style more pleasant than those already formulated.

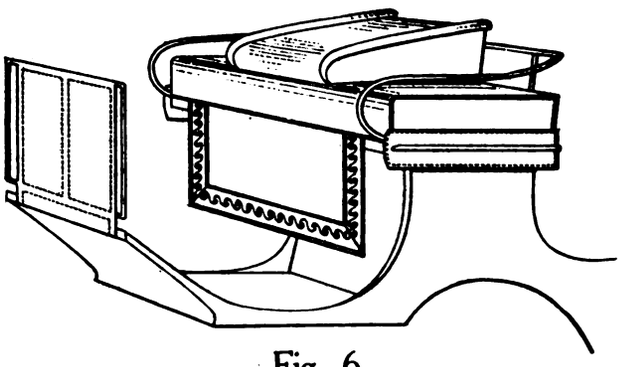


Fig. 6

AMERICAN PAINTS IN PARAGUAY.

The sales of American paints could be increased in Paraguay, as the American varnishes, enamels, etc., have the best reputation in this market, says Consul Edward J. Norton. A limited line of coach and carriage colors and carriage varnishes would find a market there, as well as special paints for steamboats. Asuncion is a central point for a number of river lines, and considerable repair and refitting work is carried on.

MACHINE FOR WASHING DOWN STREETS.

The Street Cleaning Department of New York City has recently placed in use a dozen street washing machines to be used on asphalted thoroughfares. They have been tried and found successful in every respect.

NOT AFRAID OF THE MOTOR.

Farmers Breeding More Fancy Draughters Than Ever—No Chance to Corner the Market.

Believing firmly in the future of the horse as the most economical and reliable motive power for the short haul in all kinds of teaming, J. D. Carroll, who in twelve years has built up the biggest business house of its kind in the world by his foresight and sagacity, started out about two months ago to sound the draught horse breeding industry of the West with a view of cornering the country's supply of fancy draughters if conditions warranted the move.

Mr. Carroll was confident that the next year or two would find the business of the country booming again, accompanied by a demand for big horses such as the market has never known. He only wanted to find out whether farmers and breeders out West were getting scared at the twin spectre of motor trucks and continued hard times and were curtailing their breeding operations. If they were he was prepared to take all the high class finished horses and feeders that could be found and contract for future delivery of a few thousand more that were growing up on the farms.

A thorough investigation of conditions in the West was quietly made, and the result was Mr. Carroll's abandonment of the speculative project. Careful inquiry among the country dealers, breeders, stallion owners, importers and feeders revealed the rather surpising fact that neither the financial disturbances nor the development of the motor truck has apparently produced any alarm whatever among the men who raise fancy draughters respecting the future demand for them. Many farmers who have such horses ready for the market have been holding them back and working them slightly rather than accept lower prices for them. It is even reported that some shippers to one of the Western markets recently took a carload of fancy big horses back home because current prices did not suit them. Feeders everywhere seem to be snapping up all the good young, thin ones they can find to grow and condition for marketing a year or two hence. Importers of Percheron, Clydesdale, Shire and Belgian stallions are bringing over fresh shipments every week through this port and are selling them for breeding purposes in the West about as fast as they come in, according to all reports.

"The whole truth of the matter is," Mr. Carroll said, "that our investigations go to show that more well bred draughters will be foaled in the United States in 1909 than in any past year in the history of horse breeding."

A similar investigation recently set on foot by the Breeders' Gazette, of Chicago, seems to corroborate the conclusion reached by Fiss, Doerr & Carroll. While there has been some curtailment in the breeding of light horses of inferior grades, the draught horse industry appears to be discounting the future with as much confidence as Wall street.

DESIGNED MOTOR CAR WITH BOAT-SHAPED BODY.

In the Illustrated Automobile Section of August issue of The Hub, we published a picture of an automobile with boat-shaped body. We are pleased to learn that H. J. Butler, technical editor of the Automobile and Carriage Builders' Journal, of London, Eng., was responsible for the original design. It was during his engagement with the builders, J. Rothschild et Fils Ltd., that the full size working draft was made.

NEW WHEEL MANUFACTURING CONCERN.

The Joliet Wheel Manufacturing Co. is a new organization at Joliet, Ill. They have four acres of ground and will erect a large plant, the main building of which will be 250 by 60 feet, with wings. They will make carriage, wagon and auto wheels.

Digitized by Google

General Topics of Interest to Trade

ENTIRE TRADE INVITED TO ATTEND C. B. N. A. CONVENTION AND EXHIBIT AT CHICAGO.

In the appended reprint of circular, Secretary Henry C. McLear extends a general invitation to all interested in the vehicle industry to visit Chicago during convention week.

Office of the Secretary and Treasurer,
Wilmington, Del., September 1, 1908.

To the Manufacturers of Carriages, Wagons, Sleighs and Motor Cars:

You are very cordially invited to attend the thirty-sixth annual convention of this association, and to visit the exhibition of bodies, gears and materials used in the construction of your product, which will be held in the First Regiment Armory, Illinois National Guard, Michigan avenue and 16th street, Chicago, Ill., during the week commencing October 11th of this year. The exhibition from October 12th to the 17th inclusive, and the convention, October 13th, 14th and 15th.

While we would be pleased to have you become a member of the association, you will be welcome to both the exhibition and convention whether a member or not, as they are free to all vehicle builders.

By attending the convention you will meet many representatives of the best and largest manufacturers of vehicles in the country, renew old friendships, make new acquaintances, and hear something at the meetings which, we feel sure, will be beneficial to you.

At the exhibition you will find all the latest and best that the supply trade has to offer for the use of vehicle builders.

A visit to this annual reunion of your business associates will be to your advantage and we sincerely hope you may be present.

HENRY C. McLEAR, Sec'y and Treas.

CHICAGO LOCAL COMMITTEES SELECTED TO RECEIVE AND ENTERTAIN C. B. N. A.

The Carriage Builders' National Association convention will be held in First Regiment Armory, Chicago, October 12th to 17th, 1908. Appended we give a list of the various committees with the names of the gentlemen selected to act thereon:

Committee on Finance.
Chas. D. Heile, Chairman.
E. F. Smith. Chas. P. Kimball.
M. E. Rose. O. H. Morgan.

Committee on Hotels.
Allan A. Morrill, Chairman.
Walter N. Beecher. Willard Elmendorf.

Committee on Banquet and Entertainment.
H. D. Staver, Chairman.
Thomas Clement. F. R. Hastings.

Committee on Speakers.
Fred L. Meckel, Chairman.
F. H. McAdow. Walter N. Beecher.

Committee on Printing and Badges.
E. Louis Kuhns, Chairman.
C. H. Schryver. E. D. Fisher.

CHICAGO HOTEL RATES.

The local committee furnishes the following list of hotels, which comprises all the leading ones.

The official headquarters will be at the Auditorium Hotel, which, with the Auditorium Annex, is conducted on the Epropean plan at rates for rooms from $2.00 to $7.00 per day.

The two following hotels are conducted on both the American and European plans:

Grand Pacific Hotel—American plan, from $3.50 to $4.50 per per day; European plan, from $1.50 to $4.00 per day.

All the following hotels are on the European plan only:

Great Northern Hotel—From $1.50 to $6.00 per day.
Stratford Hotel—From $2.00 to $4.00 per day.
Lexington Hotel—From $1.00 to $3.00 per day.
Sherman House—From $1.50 to $4.00 per day.
Windsor-Clifton—From $1.00 to $1.50 per day.
Palmer House—From $1.50 to $3.50 per day.
Victoria Hotel—From $1.50 to $3.50 per day.
Wellington Hotel—From $1.00 to $4.00 per day.

For rooms and accommodations, address the hotels direct.

C. H. A. T. CONVENTION AND DINNER AN ASSURED SUCCESS.

The eighteenth annual convention of the Carriage, Harness and Accessory Traveling Salesmen's Association of the United States will be held on Monday, October 5, at 8 p. m., in Parlor A, Grand Union Hotel, New York City. Important matters which are of interest to all traveling men will be discussed.

The feature of convention week will be their beefsteak dinner and vaudeville entertainment, which is to be held in Reisenweber's Hotel, Columbus Circle, on the evening of October 8th. The committee has worked hard for the success of the affair, and are assured that it will eclipse all former entertainments given by the C. H. A. T. The "beefsteak garret" where the dinner will be served is herewith illustrated.



Beefsteak Garret Where Dinner Will be Held.

NEW CARRIAGE COMPANY ORGANIZED.

Brunn's Carriage Mfg. Co. is the name of a new concern recently launched at Buffalo, N. Y. It was incorporated to manufacture wagons, carriages, automobiles, etc.; capital, $100,000. Incorporators are: Henry Brunn, Eugene W. Harrington, Frank A. James.

The soul of man is his greatest battle ground.

Digitized by Google

INSTITUTE OF BRITISH CARRIAGE MANUFACTURERS TO MEET IN PARIS.

The twenty-first annual meeting of the Institute of British Carriage Manufacturers will be held in Paris, commencing Monday, September 7th, 1908, by kind invitation of the Chambre Syndicale Des Carrossiers, of which G. Kellner is president.

The following is the programe for the three days of the meeting:

Monday.

Reception of the members by the Chambre Syndicale des Carrossiers, at the Gallerie des Champs Elysees. Luncheon by invitation of the Chambre Syndicale des Carrossiers.

Visit to Messrs. Kellner's Carriage Works at Boulogne-sur-Seine, leaving Paris in carriages provided by the Chambre Syndicale des Carrossiers.

Annual banquet of the Institute of British Carriage Manufacturers at the Hotel Continental. The members of the board of the Chambre Syndicale des Carrossiers will be the guests of the Institute.

Tuesday.

Visit to Messrs. Rothschild's Works, of which Rheims and Auscher are the successors, followed by a trip to Versailles.

Luncheon, by invitation of the Chambre Syndicale des Carrossiers, followed by a visit to the palace, the park and the Trianon.

Banquet to the members of the Institute of British Carriage Manufacturers at the Gallerie des Champs Elysees by invitation of the Chambre Syndicale des Carrossiers.

Wednesday.

Visit to the works of Messrs. Panhard & Levassor, manufacturers of automobiles and of machine tools for woodwork.

The headquarters of the Institute during the meeting will be the Hotel St. James in Paris.

H. H. BABCOCK COMPANY EXPERIMENTING WITH MOTOR BUGGY.

The above mentioned well-known carriage manufacturers, of Watertown, N. Y., are experimenting with a gasoline buggy that will not only be convenient as a runabout, but can be used on long tours at less expense for tires and repairs and a far less first cost than the present type of automobiles. There is a persistent demand for a light, less expensive machine of moderate speed and smaller cost of maintenance, and the H. H. Babcock Company seem likely to furnish it. The one or two constructed give good satisfaction, but this company will not place it on the market until it is perfected in the smallest detail.

PHILADELPHIA CARRIAGE AND WAGON BUILDERS ENJOY OUTING.

The thirteenth annual excursion of the Carriage and Wagon Builders' Association of Philadelphia took place Thursday, September 3d. The members of the association and friends went to their usual resort, Wildwood, N. J., where an enjoyable day was spent.

REBUILDING BURNED FACTORY.

The John W. Mount Company's carrige factory, of Red Bank, N. J., which was burned on June 12th last, is already being replaced. The new factory will be of brick, with cement floors and will be fireproof. It will be 92 by 38 feet, with an L 38 by 62 feet, two stories.

ORGANIZE TO BUILD METAL BODIES.

The Amesbury Metal Body Co., of Amesbury, Mass., has been incorporated by James H. Walker, James Albert Davis, Fred. England and John W. Foster, with a capital of $100,000.

SPOKE MANUFACTURERS' ASSOCIATION OF AMERICA MEETS.

The Spoke Manufacturers' Association of America, composed of 75 per cent. of the manufacturers in the country, held their regular meeting at "The Seelbach," Louisville, Ky., on August 12, with all of the firms connected with the association represented except one.

The association is a corporation incorporated under the laws of Tennessee, and it is necessary that at least one meeting be held annually in that State, and because of this fact the by-laws of the association provide for meetings three times a year, two of which can be held in any section of the country selected by the executive committee. The meetings are for the purpose of allowing the members to discuss questions pertaining to the uniformity in various grades of spokes and to promote a better feeling between the various firms allied with the association.

The meeting was addressed by several members of the association, including Peter Lesh, of Memphis, Tenn., the president, and all of the addresses were along the line of spoke grading as carried on by the members of the association as well as the character of grading in vogue by those firms not affiliated with the association.

The next meeting has been called by the executive committee for Nashville, Tenn., for December 1 next, at which time the annual election of officers will be held. The present officials are: Peter Lesh, Memphis, Tenn., president; Joseph Ashcroft, Poplar Bluff, Mo., secretary and J. R. Tubb, Sparta, Tenn., treasurer.

BUSINESS OUTLOOK IS GOOD.

On all sides we see evidences that the tide has turned. A steady improvement from this time onward may be looked for with confidence, says James W. Van Cleve, President National Association of Manufacturers, in American Industries. In New York, Chcago, Pittsburg, St. Louis, Boston and other industrial centers mills are reopening their doors. The stocks of goods in the hands of manufacturers and wholesalers have been reduced to low figures, and the resumption of purchases, which is under way in all the great lines of trade, is beginning to send in orders to the factories with a little of their old-time volume.

Within the past three weeks the output of the mills of the United States Steel Corporation has been increased ten per cent. over the average of recent months. The promise is that by the beginning of November that largest of the world's steel concerns will be running its works to nearly their full capacity. The independent steel mills, which furnish almost half of the country's product, are also responding to the upward turn in trade.

This improvement is registering itself in the reduction of the number of idle locomotives and cars. When the number was at its highest, in the closing days of April, 413,000 cars were sidetracked throughout the United States for lack of work. In the closing days of July the number had dropped below the 300,000 line. The heavy crops, which in a few weeks will begin to move to the markets, are likely to send the number of idle cars down to very small figures before November.

FISH BROS. NEW PLANT ALMOST COMPLETE.

It is expected that work on the big new plant of Fish Bros. Wagon Co., Clinton, Ia., will be completed by the first of September, and the works will be opened with a large force of hands. The main building and dry kiln which will be completely equipped are not yet completed. The dry kiln is 50 ft. x 150 ft., one story, and it is said will cost the company something like $10,000.

Creditors of the Kendall Carriage Co., Philadelphia, have filed a petition in the United States District Court to have the company adjudged an involuntary bankrupt.

Digitized by Google

C. B. N. A. COMMITTEE ON NEW MEMBERSHIP INVITE ALL MANUFACTURERS TO JOIN.

The Carriage Builders' National Association invites the membership and co-operation of every good carriage builder and accessory manufacturer in the country. It backs up the carriage builders' technical school with a cash contribution of $2,500 a year.

The annual conventions and exhibits keep one in touch with the latest improvements in carriage construction. They also give one a chance to meet his friends and to make new ones. The consequent interchange of ideas have a broadening tendency in the methods of factory management.

The C. B. N. A. is a strong force for "good roads." It helps keep the railroads from making arbitrary freight rates and arbitrary classifications. It reduces and abolishes many abuses in the carriage and accessory trades.

Its fire insurance committee is constantly on the lookout to advise its members about securing lower rates and reducing the physical hazard of their risks. It stands for the preservation of timber and conducts many tests on different lumber, regarding its fitness for use in a vehicle, and regarding substitutes for lumber that is becoming scarce.

The annual dues entitle one to a ticket to the annual banquet. The accessory man must, of course, become a member of the association before he can make an exhibit at the convention. The entrance fee is $5.00 and the annual dues $5.00 for a manufacturer of carriages, buggies, wagons, sleighs or automobiles. The entrance fee is $10.00 and the annual dues $5.00 for a manufacturer of any accessory parts.

If you are not already a member of the association you are invited to correspond with any one of the following list of men, who compose the committee on new membership for the C. B. N. A.:

Warren D. Oakes, Parry Mfg. Co., Indianapolis, Ind. chairman.
Wm. Stoltz, Chicago, Ill.
Daniel W. Voltz, Chicago, Ill.
S. G. Gay, Ottawa, Ill.
C. E. J. McFarlan, Connersville, Ind.
K. M. Andrew, La Porte, Ind.
J. P. Beck, Saginaw, Mich.
J. H. Poste, Columbus, Ohio.
C. M. Roehm, Detroit, Mich.
Allan A. Morrill, Chicago, Ill.
Fred O. Nuetzel, Louisville, Ky.
A. E. Schafer, Cleveland, Ohio.
W. C. Horr, Sidney, Ohio.

AUTUMN TERM OF TECHNICAL SCHOOL SOON TO BEGIN.

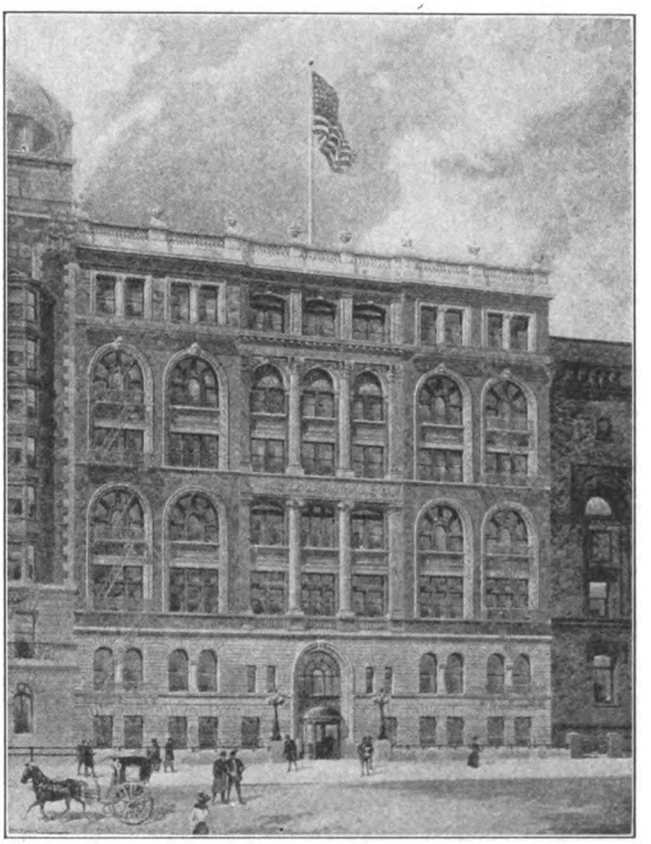
The classes in carriage drafting and construction, carried on under the auspices of the Carriage Builders' National Association, will open on September 28th, at the new quarters, 20 W. 44th street, New York City. Autumn term closes at Christmas. Winter term opens the first Monday after New Year's Day and closes April 12th, 1909.

All applicants for admission to the day or evening classes must be engaged in the manufacture of pleasure or business vehicles, and must be sixteen years of age or more. He must be able to speak, read and write English, and to write a fairly good business letter, and have a knowledge of arithmetic, sufficient to solve problems in proportion, and also in square and cube root. Some knowledge of geometry is also desirable, but it is not required on entering. Examinations for admission will take place the two weeks preceding the opening of the term; or at such time as may be arranged, to accommodate distant pupils. These examinations, which are both written and oral, will be conducted by the instructor, and be held at the school rooms.

The school is divided in three classes—day, evening and corresponding. The object of the day class is to accommodate pupils who wish to devote their whole time to the study of carriage drafting. This class meets each week day except Saturday during the term, and the hours are from 9:30 a. m. to 4:30 p. m. Instruction is free.

The evening classes are held on Monday, Wednesday and Friday from 7:30 to 9:30 o'clock. Instruction is also free.

The purpose of the corresponding class is to give instruction to the employees of carriage, wagon and automobile builders



Where Classes in Carriage Drafting Will Soon Open.

and members of the accessory trades, at their homes, by means of the so-called "Chautauqua System." This system consists in giving instruction to out-of-town pupils through the mail by lesson papers, on making free-hand, geometrical scale and working drawings, each paper calling for responses in the form of hand drawings or written replies, which are afterwards examined and corrected by the instructor. Three terms are required in order to complete the full course of corresponding lesson papers, which are eighty-three in number.

For details as to course of study and all further information, address Andrew F. Johnson, instructor, 20 W. 44th street, New York City.

PROPOSES MOVING ITS PLANT TO IOWA.

The Osborne-Wright wagon factory will be moved from Mexico, N. Y., to Boone, Iowa. Sufficient stock has been raised to guarantee the financing of the project. The enterprise will require a capital of $50,000. Twenty thousand dollars was raised in three days.

NEW FIRM AT FORT SMITH.

Lester-Sicard Vehicle company, of Fort Smith, Ark., has been incorporated to engage in the manufacture and sale of buggies and other vehicles at Fort Smith. The company incorporates with a capital stock of $5,000, of which $1,000 has been subscribed.

Digitized by Google

INDIANA CARRIAGE NOTES.

If the efforts of Indiana carriage manufacturers are successful, next year promises to be a motor buggy year in Indiana. The buggy with an attached motor seems to be particularly alluring to the Hoosier manufacturer, for an even dozen are now manufacturing them and four other carriage manufacturers are bringing out models. The result will be watched with interest, as to date the motor buggy has not met with success in this state.

Frank Stanley, vice-president of the H. T. Hearsey Vehicle Co., made a trip through southern Indiana recently and found trade in a very encouraging condition. He states that his company is having a nice summer carriage trade, although somewhat less than it was last year.

At the Indiana State Fair, held in Indianapolis, Sept. 7-11, carriages and buggies were given more prominence than ever. Secretary Charles Downing stated that the demand for space was more than it had ever been before and that much additional ground had been set aside for carriage exhibits.

Beginning in October, the Indiana Carriage Comapny, 27-33 North Capitol Ave., will handle a line of automobiles in connection with their carriages, although the lines have not yet been decided upon.fl This leaves only two carriage respoitories in the city that are not carrying automobiles or accessories.

S. C. Parry, treasurer of the Parry Manufacturing Company, recently returned fro man eight months' trip that took him almost around the world. He traveled through Europe, Asia and the Phillippines, in a neffort to improve his health. He returned greatly improved.

A change in the business affairs of Winter & Hill has been made and while the partnership is to be continued, each member of the firm will lokk after some special feature of the business. H. O. Winter will look after the Indiana trade of the Gale Manufacturing Co. while W. B. Hill will travel through the State in the interest of Fish Bros., wagon manufacturers.

A twelve acre site casting $12,000 has been purchased in South Bend by Clement Studebaker, Jr., son of the late Clement studebaker. He proposes to build a home costing about $12,000, surrounded by a small park that will be laid out by some of the best known landscape gardeners in the country.

The organization of the Frankfort Carriage Manufacturing Company has been competed at Frankfort and a large plant for the manufacture of carriages and other vehicles is to be established immediately. Those interested in the company are L. M. Morris, J. N. Dorner, George Dorner, and G. C. Frankenfield, all of whom have had experience in the carriage manufacturing business.

J. B. Ford of the Brown Manufacturing Company, Zanesville, O., was in Indianapolis recently looking after the business affairs of the local branch office, which has been without a manager for some months.

Robinson & Co. whi hae had headquarters at Kentucky avenue in the Magnolia Block for some years, have moved to 102 S. Senate avenue where W. A. Ivey will continue as manager for this territory. The building is a new one and the second floor will be occupied by W. A. Long, Indiana manager for the Johnstown Harvester Company.

G. E. Keller, sales manager for the Parry Manufacturing Co. has returned after a very pleasant vacation spent in Wisconsin where he found some excellent fishing.

The Oldendorf Carriage Company, manufacturers, at Thornton, suffered a heavy loss by fire on July 31. Several other business concerns were affected, the total loss reaching $27,000, only partially insured.

The Buick-Loesy Co., 415 Massachusetts avenue and the Capitol Auto Company, 130 East New York street, recently traded locations. The former company will continue to handle will devote its attention in the future to manufacturing auto- e Buick automobiles in Indiana while the latter company mobile and vehicle tops exclusively.

ENGLISH PATENT ACT NOW OPERATIVE.

The year of grace granted to foreigners under the new Englist patent act expired August 28, and from that time foreign patents in that country may be revoked by Great Britain, after a reasonable interval, unless the patented article is manufactured or the patented process is operated in the United Kingdom to an adequate extent.

A great number of foreign firms already have taken sites and started works in Great Britain. Many others are making arrangements to do so. These are mainly German and American firms.

Sir Alfred Jones, head of a prominent firm of ship owners, estimates that $125,000,000 will thus be invested there for the manufacture of articles formerly manufactured abroad, and a prominent expert in patent law thinks that no fewer than eight thousand patents granted to foreigners will come under the new law.

INTERNATIONAL CONGRESS PLANS RETALIATION AGAINST ENGLISH PATENT LAW.

The International Congress for the Protection of Industrial Property, which held its sessions in Stockholm, Sweden, last month, took up the discussion of the British patent act in its effect on foreign countries, and touched also upon other important questions. Mr. Edward B. Moore, United States Patent Commissioner, said:

"The result of the discussion on England's new patent law probably will be that the majority of nations belonging to the International Patent Union will enter a protest against it and recommend to the official congress to be held next year in Washington that some sort of retaliatory combination against Great Britain be formed whereby Great Britain must either become a party to their proposition or be excluded from all the benefits to be derived from such a combination."

Under the new law all articles patented and sold in Great Britain must be manufactured in that country, and the attempt on the part of the Congress to have the law modified is of particular interest to American manufacturers of machinery, largely used in British factories who, having obtained the patent rights in Great Britain, continue to supply British factories with machines made in the United States. There has been a widespread protest against the enforcement of this law, particularly on the part of the United States and Germany.

NEW CARRIAGE COMPANY ORGANIZED.

The plant of the Robinson Manufacturing Company, of Freeport, Ill., purchased recently by the Moline Plow Company, will be operated by a corporation known as the Freeport Carriage Company, all of the stock in which is owned by the stockholders of the Moline Plow Company. The company has been capitalized at a nominal amount and the incorporators are F. G. Allen, A. C. Barber and L. C. Blanding.

SELLS PART OF BUSINESS.

The Spitzli Manufacturing Company, of Utica, N. Y., has disposed of the thill coupling and anti-rattler end of its business, and will devote its entire time to the manufacture of roller chafe irons, and will add other lines in the near future.

INCORPORATED TO BUILD AUTOMOBILE BODIES.

The Fisher Body Company, Detroit, Mich., was recently incorporated. The company is capitalized at $50,000, and the following officers have been elected: A. Fisher, president; C. T. Fisher, vice-president; F. J. Fisher, secretary and treasurer.

They will engage in the manufacture of wood and metal automobile bodies. Their plant will be in readiness for operation September 10th.

Digitized by Google

SPECIAL TRADE NEWS FROM MICHIGAN

Newsy Notes by our Correspondent Concerning Well Known Carriage and Automobile Manufacturers in the Wolverine State.

One of the most noteworthy deals in the vehicle world during the season was that which took place on August 5, whereby the big plant of the Dunlap Vehicle Co., of Pontiac, was merged with the Pontiac Buggy Co., the reorganization being perfected at the annual meeting of the latter concern. The Pontiac Buggy Co. was capitalized at $250,000, of which $100,000 was preferred stock. The buggy company, in taking over the Dunlap business, increases its common stock by $100,000, making the total capitalization $250,000 common and $100,000 preferred. By the addition of the Dunlap plant the Pontiac Buggy Co. now has one of the largest carriage factories in the world. At present the two plants will be conducted individually, although under one managment. Eventually, it is expected, the departments will be consolidated. L. L. Dunlap henceforth will be identified with the Pontiac Buggy Co. S. E. Beach has been elected by the stockholders of the Dunlap concern as trustee and will close that corporation's affairs. It is expected that six months will be required to wind up its business. The sale to the buggy company does not include the outstanding liabilities and accounts. The company's corporate existence ended by limitation. It is believed that Mr. Beach later will become identified with the Pontiac Buggy Co. The consolidation of the Pontiac Buggy Co. and the Dunlap Vehicle Co., under the former's name brings together a business which it was deemed advisable to divide a number of years ago. The Pontiac Buggy Co. was one of Pontiac's earliest vehicle industries. The growth of the business necessitated the forming of the Dunlap Vehicle Co., the majority of the stock being held by stockholders of the buggy company. L. L. Dunlap took the managment of this business which thrived until a third company, organized under practically the same conditions, was organized. This was known as the Crescent Carriage Co. The next step in the business was the complete separation of the plants of the Pontiac Buggy Co. and the Dunlap Vehicle Co., S. E. Beach and L. L. Dunlap going over to the latter company and E. M. Murphy remaining at the head of the buggy company, with George J. Cram as secretary. Later, the Crescent Carriage Co. was conducted under the buggy company's management and when the Oakland Motor Car Co. was organized, the Crescent factory was sold outright to the automobile concern. The most recent step in the development of the business is expected to result in a material increase of the output. The location of the two plants, which are separated only by a narrow strip of land, will make possible the erection of a central building, to be utilized as a shipping department for both plants. This plan is being considered.

The following officers were elected at the meeting: E. M. Murphy, president; M. J. Hallinan, vice-president; George J. Cram, secretary and general sales manager; D. L. Kimball, treasurer; D. W. Connell, general superintendent. The above named men and James Dempsey, of Manistee, with L. L. Dunlap, were made directors. The company is well pleased with the outlook for next season's business and is already making plans for the new year.

The Rapid Motor Vehicle Co., of Pontiac, is erecting a building 300 feet long, 100 feet wide and three stories high, as an addition to its present plant, the intention being to manufacture trucks of five tons' capacity. This concern has a reputation for making sight-seeing cars.

Albert Fisher, wagon and carriage manufacturer and dealer, 310 Fort street west, Detroit, is the head of the new Fisher Body Co., makers of automobile bodies, which recently was incorporated with a capital stock of $50,000, $30,000 of which has been paid in.

Articles of association have been filed with the county clerk at Grand Rapids by Miller Auto Manufacturing Co., to manufacture and sell automobiles, motors and auto parts. The capital stock is $2,000 and the incorporators are: Joseph Renihan, William A. Bates, William F. Stadel, Charles E. Hessey, A. J. Miller, Harry W. Bissell and Michael Colleton.

Among the exhibitors at the west Michigan State fair this year will be numerous carriage and implement manufacturers, among them being: The Owosso Carriage & Sleigh Co.; the Flint Wagon Works; the W. A. Patterson Co., of Flint; the American Carriage Co., of Kalamazoo and the Laporte Carriage Co., of Laporte, Ind. Two large exhibitors of implements who will be represented are the Oliver Chilled Plow Works, of South Bend, Ind., and the LeRoy Plow Works, of LeRoy, N. Y.

Receiver R. J. Lounsbury, of the P. O. & N., has petitioned the circuit court at Pontiac to enable Receiver C. V. Taylor, of the Standard Vehicle Co., to pay him $158.59 which he claims as his salary and expenses for six and a half days' work while traveling seeing stockholders of the Standard company and securing their consent to the company's liquidation.

M. E. Perring, of Nicholville, has invented and patented an anti-slip and tire-saving device for automobiles. The purpose of the contrivance is to provide automobile wheels with all sufficient traction means and at the same time eliminate the disadvantages of ropes and chains. It produces no wear upon the tires and when in use, it is claimed to be an effective preventive of tire-creeping, because the draft is transferred from the tire to the rim.

W. F. Rieman, of Chicago, and a number of his business associates known in the auto manufacturing world, have purchased the patents, machinery and equipment of the Hillsdale Automobile Co., of Hillsdale. They have already sufficient capital to manufacture the Raymond design machines extensively.

H. Dalton, vice-president of the Weston-Mott Co., of Flint, who recently was ill from apparent ptomaine poisoning, is at his office again.

Max Brock, who recently sold a large tract of land on the Michigan Central railroad tracks, between Vermont avenue and Lafferty place, Detroit, says that it was purchased by the International Harvester Co., as a site for a large warehouse. The concern, it is reported, will make Detroit the distributing station for the greater portion of Michigan. It is said that the extent of the International Harvester Co.'s business in this State amounts to about $2,000,000.

Owosso implement dealers report that there never has been such a demand for hay loaders and other hay-making machinery as at the present time. Difficulty is being experienced in filling orders.

The Michigan Wheel Co. recently gave its first annual excursion and picnic at Jenison Park, Grand Rapids. There were ball games, foot races, and other athletic sports, with prizes for the victors.

A party of 91 employees of the Buick Motor Co., of Flint, was

Digitized by Google

entertained at a fish and frog supper at the hotel in Linden, by William H. Little, factory manager. The banqueters included the superintendents and foremen of the various departments and the men of the purchasing and cost departments. The trip to Linden was appropriately made in autos. Each of the superintendents was given a silver watch of French make, the recipients being W. E. Geldert, superintendent of factory No. 1; A. C. Mason, of No. 2; C. S. Marion, of No. 3; H. L. Bock, of No. 4 and George Webber, of No. 6. The Buick company established a new record in the manufacture of automobiles, by turning out 1,409 machines at its Flint plant and 245 cars at its branch plant in Jackson, during the month of June.

E. J. Baker, of Kansas City, general president of the United Brotherhood of Leather Workers in Horse Goods, who was in Detroit recently, on business, in an address before the Detroit Federation of Labor, said:

"Throw away all your isms—your republicanism, your socialism, your democracy, your prohibition and be union men. If you expect to get a square deal from any party you don't control you'll get left."

Mr. Baker told the federation members to emulate the English union men who pay the expenses of the members of parliament whom they elect. Mr. Baker, who has been traveling about, unionizing the members of his craft, reported that one factory employing several men had signed an agreement and that several custom shops had followed suit.

The new model 14 motor-buggy, the first turned out by the Buick Motor Co., of Flint, attracted considerable attention when exhibited on the street. The initial machine was driven by B. Marr, the company's designer, and caused much favorable comment. This particular motor-buggy is equipped with a two-cylinder, 12-horse power engine and is claimed to be capable of developing a speed of 20 miles an hour. It is built on entirely new lines and is extremely neat in appearance.

The Flint Vehicle Workers' recent excursion to Detroit was a decided success. Leaving Flint on the Pere Marquette road at 6 in the morning, the merrymakers arrived in Detroit and took the steamer Owana for Sugar Island, where two hours were enjoyably spent. Each excursionist was provided with a free ticket of admission to Electric Park, where a special vaudeville program was given in the pier pavillion. The fans found fun in a big league ball game and the devotees of horse racing were entertained at the last day's racing card of the big Windsor, Ont., meet, across the river, where 170 horses were entered. Secretary F. R. Staples of the Vehicle Workers' association and the committees which worked with him to make the entertainment a success expressed themselves at the conclusion of the day's program, as entirely satisfied with the results.

G. H. Turk, manager of the Detroit branch of the reorganized Dunlap Vehicle Co., 587 Michigan avenue, said to a representative of The Hub that the company looked for an improved trade in the spring. "While business is a trifle off, just now," he said, "there is every reason to expect improved business, as the financial condition of the country at large is rapidly picking up."

W. F. Rieman, of Chicago, and a number of his business associates known in the auto manufacturing world, have purchased the patents, machinery and equipment of the Hillsdale Automobile Co., of Hillsdale and will manufacture automobiles.

George L. Frank, wagon and carriage maker and implement dealer of Salzburg, is planning a two-story addition to the Frank Carriage Co.'s plant, to be utilized as carriage, wagon and farm implement repositories and for the manufacture of trucks, vans and delivery wagons. A complete repair shop has been installed in the factory. Mr. Frank has announced that he will be a candidate for county treasurer in 1910.

Joseph L. Means, for the last six months prominently identified with the testing department of the Buick Motor Co., of Flint, has left for Fort Du Chene, Utah, to assume the management of the thirty commissary automobile wagons of the United States army. Mr. Means came to Flint from Chicago. As superintendent of the commissary department's rolling stock, Mr. Means' territory will cover a large part of the country. He is an expert machinist and chauffeur.

Fred O. Paige, president of the Reliance Motor Car Co., has resigned from the management of the Detroit agency of the Hartford Life Insurance Co., to devote his entire time to the motor concern.

Repeated announcements of reductions in price of the 1909 makes of automobiles are being made. Following the sweeping cuts in the standard cars by the Ford, Chalmers-Detroit, Everett-Metzger-Flanders Co. and other Detroit firms, comes the announcement from the E. R. Thomas Co., in Buffalo, N. Y., that a Thomas Flyer of 2,000 pounds weight, and having a six-cylinder motor, will be priced next year at $3,000.

The Wachman Auto Manufacturing Co., of Detroit, is putting out a new spark plug, which it has named the "Sure Fire," in lots of 50,000 styles, marketing it at 50 cents.

A 30-horse power Chalmers-Detroit motor car, one of the new $1,500 models, recently began a month's endurance test, making a double-century run daily.

Negotiations are practically closed, whereby the Buick Motor Co., of Flint, will buy the large body factory of W. F. Stewart who was one of the first men of that city to start a manufacturing business in that line, on a large scale. The Stewart plant is located directly across the street from the Buick works' main factory and it employs several hundred men in the manufacture of buggy bodies. The Buick concern now has under construction two large additions to its factory and when these are completed Flint will have one of the largest automobile plants in Michigan, giving employment to several thousand men. Recently the Buick people combined with the Maxwell Auto Co., thus bringing together two important auto-making plants. It is generally understood that one of the main reasons for the merger was a question of saving in the sales department, as the agents under the new combination can handle both machines at a much reduced price. It is reported that it is the intention of the Buick concern ultimately to move the Jackson business of the company to Flint, as soon as suitable new buildings can be erected. The drop forge and hammer shop will be moved to Flint about November 1.

The Buick-Waller Automobile Co., of Grand Rapids, has been taken over by the Buick Motor Co., of Flint. George W. Waller remains in the former city as manager of that branch.

In order to give their traveling salesmen an opportunity to thoroughly inspect the line of vehicles manufactured by the Pontiac Buggy Co., of Pontiac, so they can more intelligently explain the merits of the Michigan vehicles, the Messrs. Crawford and Van Clive, managers of the Emerson Newton Co., of Kansas City, recently brought eight of their road employees to Pontiac. Crawford and Van Clive were the first of the large jobbers to arrive on their annual inspection visit. This house handles the trade of Oklahoma and Kansas. The outlook for a year of propserity is said to be very bright.

It is reported that the Reliance Motor Truck Co., of Owosso, will build its new factory on what is known in that ctiy as the site of Estey factory A. Ten thousand dollars is the price asked.

John L. Poole, European agent for the Buick Motor Co., of Flint, recently cabled R. T. Keats, manager of the foreign department of the concern, that he sold a Buick model 10 to Prince Eugene, brother of the king of Sweden, in Paris. The Buick No. 10 is the new runabout machine marketed by the company last fall. More than 1,000 of them were turned out in June and the July output also was phenomenal.

Digitized by Google

Recently Granted Carriage Patents

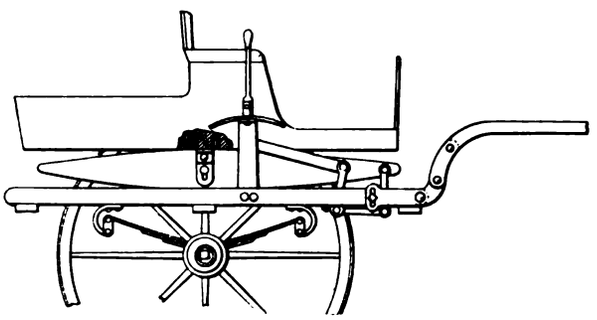
Space will not permit us to illustrate all new patents pertaining to the vehicle industry issued by the Patent Office. We therefore select those that we consider of the greatest interest to our readers.

Device to Prevent Horse Motion in Carts. William N. Cleveland, of Dover, Ky. No. 894,603. Patented July 28, 1908.

The object of the invention is to provide an attachment for carts or two-wheeled vehicles by means of which the objectionable horse motion will be entirely eliminated.

Referring more particularly to the drawing, which is here shown as consisting of a body mounted upon a suitable supporting frame, comprising outer side bars, which are connected at ends and center by cross bars. Connected to the projecting ends of the cross bars are shaft bars to the forward ends of which are connected the inner ends of the shafts or thills of the vehicle.

To the bars are connected suitable springs to which are secured the axle. Secured to the side bars immediately above the central cross bar is a rocker shaft on each end of which is pivotally-mounted a rocker. These rockers are shown and are preferably in the form of elongated elliptical-shaped bars.



Secured to the upper sides of the rockers are pairs of body-engaging pins. These pins are adapted to loosely engage recesses or sockets formed in the bottom side rails of body. Arranged on the outer side of each of the rockers at the center are body fastening devices. The body of the vehicle is loosely held in rocking engagement with the rockers.

In order that the position of the rockers may be regulated to maintain a substantially level position for the body of the vehicle when used with horses of different heights or traveling up or down steep grades, a suitable adjusting mechanism is provided. Said mechanism is here shown and is preferably in the form of a crank shaft journaled on the under side of the side bars of the vehicle frame and having at its ends forwardly-prejecting crank arms connected by short links with the forward ends of the rocker bars. The cranked end of the shaft is connected by a link or rod, with a suitable operating lever, which is pivotally mounted on the inner side of one of the shaft bars and is provided with a fixed pawl. The pawl is adapted to be engaged with a segmental rack secured to said shaft bar, as shown and is held in engagement with rack by means of a spring. When the vehicle is traveling on an up grde, the lever is thrown forwardly, thereby lowering the front end of the rocker bars and the body of the vehicle mounted thereon, thus bringing body to a substantially level position. When traveling on a down grade, the lever is thrown in a reverse direction.

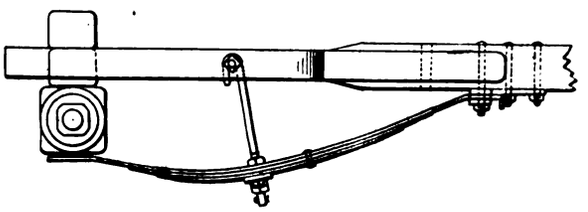
In addition to the rocker adjusting mechanism, means are provided whereby the shafts or thills of the vehicle may be adjusted to accommodate the same to horses of different height.

Wagon Tongue Support. Hugh P. Huddleston, of Bisbee, Ariz. No. 894,324. Patented July 28, 1908.

This invention contemplates new and useful improvements in vehicles and relates particularly to a duplex spring wagon tongue support. This invention will be found useful for farm and mountain use.

One of the claims is:

The combination with the front axle, tongue, tongue hounds and hound bolt of a vehicle, of a plate secured to the underside



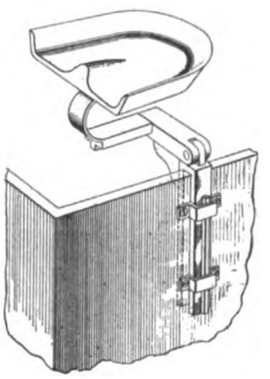
of said tongue in advance of the hound bolt, a clip bar extending across and underneath said plate, springs having their front ends interposed between said clip bar and plate and having a sliding movement between such parts, the said springs extending rearwardly and bearing with their rear ends against the underside of the axle, and suspension bolts connected to the hound bolt and also connected to said springs intermediate of the ends of the latter.

Wagon Seat. Norval P. Rogers, of Jefferson, Pa. No. 895,042. Patented Aug. 4, 1908.

This invention relates, generally, to wagon seats, and more particularly to one adapted for use in connection with farm wagons.

The object of the invention is to provide a seat of this character which may be readily attached to or detached from the wagon body so as to occupy a position either on the right or left side of a wagon, and which shall be capable of being folded down against the side of the wagon body thus to be out of the way when the body is being filled with any substance.

Accompanying diagram is a view in perspective exhibiting a



portion of the wagon body with the improved seat applied thereto.

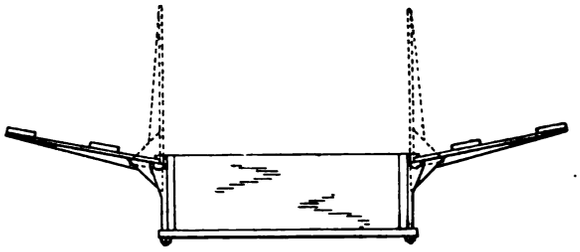
Combined Hay and Stock Rack. William C. Skinner, of Rochester, N. Y., assignor of one-half to William H. Burns, of Rochester, N. Y. No. 895,119. Patented August 4, 1908.

This invention relates to certain new and useful improvements in combined hay and stock racks designed to be attached to an ordinary wagon body.

It has for its objects among others to provide an improved simple attachment of this nature embodying standards or brackets with screw threaded shanks designed to be secured vertic-

Digitized by Google

ally at the opposite sides of the wagon body and peculiarly constructed and adapted to hold movable arms having trunnion portions at their inner ends occupying openings in the upper expanded portions of the standards or brackets, and serving, when in vertical position, as the sides of a stock rack for carrying small animals, such as calves or sheep, and when in their nearly-horizontal position adapting the wagon for use as a hay rack, the said arms being connected together upon each side of the wagon body by longitudinal bars or strips. The construction of the standards and arms is such that the latter cannot be detached from the standards when the arms are in a vertical position, nor when they are in their lowermost or nearly horizontal position, but the arms must be turned to an angle of substantially forty-five degrees from a perpendicular, when they can be readily passed obliquely upward out of the slots or



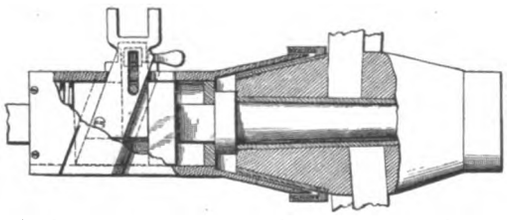
openings in the expanded parts of the standards or brackets. In some instances the standards may be formed with ears or lugs by which they may be secured to the sides of the wagon body.

Automatic Brake for Vehicle Wheels. Omar L. Herod, of Dunkard, Pa. No. 895,859. Patented August 11, 1908.

This invention relates to new and useful improvements in automatic brakes for vehicles. Illustration shows a bottom plan view of the device.

The casing bears against one edge of the shoulder upon the axle, and against which shoulder a suitable washer bears, made preferably of felt and provided for the purpose of keeping any grease or oil from passing by the shoulder of the axle. Mounted to have a sliding movement over said casing and axle is a boxing having a flaring end designed to telescope over the circumference of the inner end of the hub, as shown. The outer end of the flaring portion of said boxing has a cylindrical portion adapted to telescope within the dust bands.

Fitted within the inner end of the boxing is a plate, through which the axle passes. A coiled spring, which is interposed between the casing and said plate serves to nominally hold the



boxing at its farthest throw away from the hub of these wheels, so that the frictional brake surfaces will be out of contact with each other.

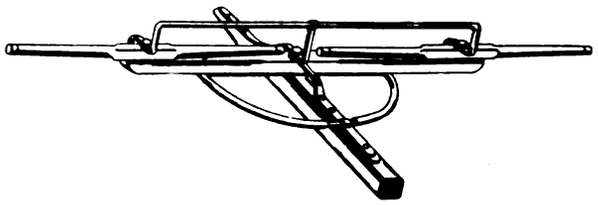
In operation, in the event of it being desired to apply the brake, it may be done automatically by a backward pressure upon the thill or shaft.

In the event of it being desired to set the apparatus so that the brake will not automatically apply, the operator may, by depressing pin at shaft eye with any instrument, such as the butt of a whip, cause the end of the pin to pass into the elongated slot.

Doubletree and Line Holder. Walter A. Williams, of Lexington, Okla. No. 895,927. Patented August 11, 1908.

This invention is an improvement in doubletrees and line holders for use thereon.

The improvement comprising the tongue, the plate thereon, the doubletree, the doubletree plate having a stay plate secured to the under side of the doubletree and a forwardly extending arch rod provided at its middle with the reduced portion sliding upon the tongue plate, a cover plate secured upon the tongue and having a bearing portion overlying the central reduced portion of the arch rod and forming a keeper therefor and provided

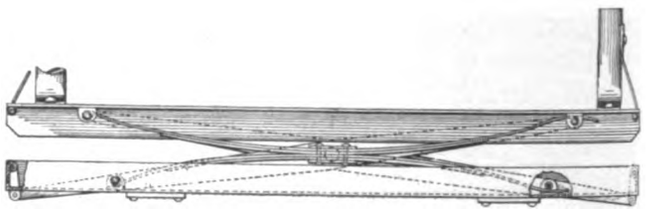


at its rear end with the upwardly projecting portion overlying the doubletree, the king bolt pivoting the doubletree in connection with the tongue, the singletrees, the bolts pivoting said singletrees to the doubletree, and the line rod having the intermediate and end depending portions secured by the king bolt and the pivot bolts of the singletrees.

Spring Wagon Bolster. John L. Hagel and August Hagel, of Providence, Minn. Patented August 18, 1908. No. 896,105.

This invention has for its purpose to provide an improved spring wagon bolster which is, nevertheless, adapted for general use on various kinds of vehicles.

This improved bolster is made up of what, for distinction, may be designated as a lower or primary bolster and an upper or secondary bolster, and a novel arrangement of springs whereby the latter is supported from the former. In some instances, usually in rear bolsters, the primary and secondary bolsters are connected by equalizing bars of novel construction and arrange-

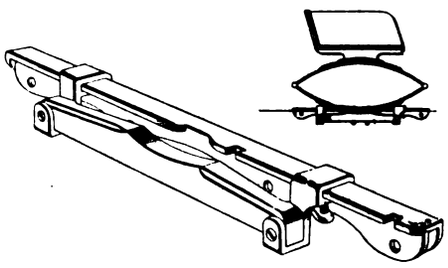


ment which hold the two bolsters always parallel to each other, and this constitutes another feature of this invention.

One of the accompanying illustrations is a view in elevation, showing the improved spring bolster as an entirety; the other is a vertical longitudinal section, taken through the bolster. With this arrangement the springs keep compressed until the angle bars of the upper and lower bolsters are forced into the same or approximately the same vertical space. This is made possible by the reverse arrangements of the upper and lower angle bars, so that their vertical flanges may overlap when the springs are compressed. This construction, as is evident, gives a complete spring bolster that occupies but very little vertical space and, hence, does not necessitate the elevation of the wagon box or the supporting thereof in a position objectionably high above the axles.

Seat for Wagons. Philip J. Luthardt, of Seymour, Wis. No. 896,127. Patented August 18, 1908.

This invention relates to seats for farm wagons, or the like,



and particularly to the means for mounting or attaching such seats upon the wagon body. At the present time spring seats for wagons are secured upon the wagon body by hangers attached to the supporting bars for the springs, said hangers being

Digitized by Google

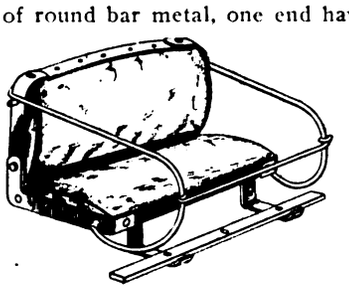
arranged to engage over the sides of the wagon body and thereby support the seat thereupon. The common form of attaching means for wagon seats is disadvantageous because when the wagon passes over obstacles or obstructions, the jar often disengages the supporting means of the wagon seat from the wagon body and the driver upon said seat is sometimes injured by displacement thereof. Furthermore, should the horses hitched to the wagon start to run away, it is a very common thing for the wagon seats now in use to be rearwardly thrown by disengagement of the supporting means from the wagon body, and the driver is thus often thrown from his seat and stopping of the runaway horses prevented, and the driver injured.

What is claimed as new is: In combination a wagon body comprising spaced sides longitudinal seat supporting members attached to said sides, and formed with lateral flanges, a seat, hangers attached to said seat, locking means for holding said hangers at a predetermined adjustment in the length of the supporting members, said hangers being provided with extensions interlocking with the flanges above mentioned, and the flanges being formed with recesses of a width sufficient to permit the extension of the hangers to pass therethrough in disengaging the same from the supporting members to remove the seat.

Removable Vehicle Seat. Joseph M. Dixon and Joseph F. Barwick, of Ayden, N. C. No. 896,278. Patented August 18, 1908.

This invention relates to a removable seat for vehicles, such as buggies and other carriages, the object of which is to provide an easily detachable seat for children at the rear of the vehicle, which, when not in use, may be folded or entirely removed.

Pivoted to each end of the seat near the front is an arm rest, preferably made of round bar metal, one end having an eye for



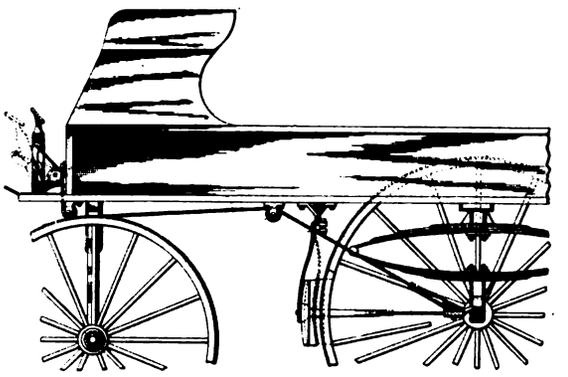
the pivot attached to the end of the seat or to the bracket. The arm rest curves from the pivot forwardly and upwardly to the back, and there rests on pins as shown. A rod connects the two rests behind the back of the seat, and it also serves as a stop for limiting the rearward movement of said back. As a matter of economy and simplicity, the two arm rests and the connecting rod may be made of one piece. Extending between the arm rests in front of the seat is a rod which may be made fast to the arm rests behind the back of the seat, and it also serves as a stop or apron will be attached.

When the seat is not in use the back turns forward on its pivot, to prevent dust from settling thereon, the arm rests being also turned on their pivots rearwardly, thus reducing the seat to a more compact form.

Wagon Brake. Gerhard H. Kanke, of St. Louis, Mo. No. 896,391. Patented August 18, 1908.

This invention relates to a wagon brake and it has for its object to provide an efficient brake of this construction that may be readily put in service and which contemplates the employment of members that are adjustable relative to each other to provide for variation in the adjustment of the parts and also means whereby compound leverage action is secured in the operation of the brake lever.

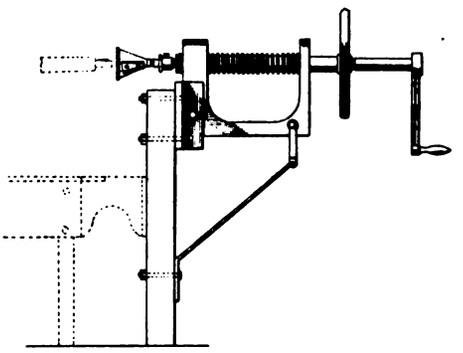
In the operation of this brake the operating lever is moved forwardly, and as it is so moved the auxiliary lever is carried forwardly with the operating lever, but its upper arm is caused to move more rapidly than the operating lever, due to the fulcruming of the lower arm of the auxiliary lever on the post of the bracket. A compound movement is thus secured which provides for the brake heads being quickly and positively set to the wagon wheels with a minimum expenditure of exertion when



the pull rope is drawn forwardly by the levers and a pull is exerted upon the draw rope.

Wheelwrights' Machine. James R. Richmond, of Lewisburg, Ky. No. 896,579. Patented August 18, 1908.

This invention relates to wheelwrights' machines, and one of the principal objects is to provide a simple and convenient machine for forming tenons on the ends of spokes and for various operations connected with wheels; also to provide means whereby the machine may be readily adjusted vertically. The machine may be adjusted angularly whereby it may be used in connection with a bit of suitable form for drilling a wheel rim and hub.



When the machine is in use for drilling purposes and it is desired to adjust it at an angle, bolts are loosened, whereupon the brace may be raised or lowered to properly position the frame, it being understood that the bolt is held by the hand of the operator during the operation of adjusting the brace.

RECENTLY GRANTED PATENTS RELATING TO THE VEHICLE TRADE.

891,321—Vehicle Top Support. L. L. Allen, Gustine, Texas.
891,582—Buggy Top Retainer. R. L. Allison, Huckabay, Texas.
891,655—Vehicle Wheel. T. A. Baker, Renick, Mo.
891,522—Vehicle Wheel. L. W. Bryant, St. Louis, Mo.
891,460—Combined Front and Apron for Vehicles. W. J. Campbell and G. W. Hedrick, Dayton, Va.
891,668—Holdback Iron. R. B. Carpenter, Manchester, N. H.
891,462—Spring Wheel. S. S. Childs and W. Childs, Jr., Bernardsville, N. J.
891,328—Vehicle. I. Cowles and E. H. MacDowell, South Haven, Mich.
891,465—Antirattler Thill Coupling and Support. W. Cox, Provo, Utah.
891,467—Vehicle. J. H. Diehl, Stockton, Cal.
891,413—Automatic Closing Mechanism for Dumping-Wagons. M. J. Ely, assignor of one-half to L. Hache, Oxnard, Cal.
891,247—Wagon Brake. R. A. Griswold, Dundee, Ill.
891,338—Tire Bolting Machine. J. A. Hemsley, Trenton, N. J.
891,429—Vehicle Wheel. J. Luppino, New London, Conn.
891,745—Wheelwright Machine. J. G. Stoen, Lac qui Parle, Minn.
891,385—Logging Cart. T. A. L. Strange, Thrasher, Miss.
891,451—Buggy Top Fastener. G. J. Wenzlick, Iowa City, Ia.
892,117—Means for Regulating the Temperature in Vehicles. T. C. X. A. Berget, Paris, France.
891,908—Thill Support. A. H. Chamberlain, Bridgeport, Conn.
892,135—Resilient Vehicle Wheel. C. A. Conroe, Topeka, Kan.
891,815—Carriage Top. C. W. Coops, Taunton, assignor to Coops Manufacturing Company, Boston, Mass.
892,041—Vehicle Spring. F. G. Fletcher and J. L. Register, O'Brien, Fla.
892,051—Vehicle. E. R. Hewitt, New York, N. Y.
892,163—End Gate. E. C. Kidd, Hartwell, Nebr.
892,268—Dump Cart. H. T. Kingsbury, Keene, N. H.
892,273—Whip Lock. H. C. Laudermilch, Halifax, Pa.

Digitized by Google

891,063—Vehicle Brake. O. S. Lee, Terre Haute, Ind.
891,942—Dumping Push Car. R. L. Looney, Hancock, Mich.
892,291—Vehicle Wheel. J. McIntyre, assignor to J. E. McIntyre, Boston, Mass.
892,294—Vehicle Wheel. J. Nicholson, Boston, Mass.
891,963—Dump Wagon. D. Stafford, Wheaton, Ill.
892,323—Wheel. E. Stancliff, New York, N. Y.
892,640—Wheel. A. B. Ament, Oakland, Cal.
892,390—Locking Whip Socket. F. Bergholm, Jamestown, N. D.
892,397—Antirattler Thill Coupling. W. A. Burnop, Deerfield and G. H. Spitzli, assignors to Spitzli Manufacturing Co., Utica, N. Y.
892,648—Felly Joint. J. A. Cain, Wise, Mo.
892,936—End Gate Fastener. M. R. Cole, Shenandoah, assignor to Standard Manufacturing Co., Council Bluffs, Iowa.
892,746—Adjustable Wagon Tongue. H. J. Lawrence, Elmore, Minn.
892,436—Axle. R. V. Lee, Calistoga, Cal.
892,673—Wheel Tire. A. Michelin, Paris, France.
892,621—Wagon Skid Holder. J. B. Ratliff, Drew, Miss.
892,448—Vehicle Washer. L. E. Rhodes, Hartford, Conn.
892,452—Spring Wheel for Motor-Cars and other Vehicles. E. Rodriguez, Chiswick, London, England.
892,694—Thill Coupling. G. A. Stiles, Vertrees, Ky.
892,769—Carriage Foot-Brake. C. Strohkorb, Berlin, Germany.
892,777—Detachable Runner. C. F. Toennies, Jersey City, N. J.
892,695—Sled Brake. T. Tonlison, Charleroi, Pa.
892,696—Wagon Tongue Support. W. A. and W. T. Walker, Racine, Wis.
892,969—Carry-All. S. D. Wilson, New York.
892,701—Hub Attaching Device. A. H. Worrest, Lancaster, Pa.
893,122—Lubricating Attachment for Axles. J. Aden, Greensboro, N. C.
893,150—Thill Coupling. J. P. Driscoll, Greenland, Mich.
893,159—Dumping Vehicle. J. M. Goodwin, Mount Vernon, N. Y.
893,489—Automatic Vehicle Stopping Device. B. de Halmy, Dios Gyor, Austria-Hungary.
893,257—Device for Extracting Spokes from Hubs of Wheels. J. Messinger, Philadelphia, Pa.
893,544—Wagon Standard. R. E. Rawls, Hattiesburg, Miss.
893,549—Axle. D. E. Ross, Brookston, assignor to Ross Gear and Tool Company, La Fayette, Ind.
893,270—Vehicle Wheel. U. P. Smith, Akron, Ohio.
893,411—Roller Bearing Hub. E. M. and H. Wolfenden, Philadelphia, Pa.
894,094—Spoke Jack. J. A. Alley, Stoneville, N. C.
893,832—Tire. H. B. Baruch, New York, N. Y.
893,715—Vehicle Wheel. E. Fishburn, Overbrook, Kan.
894,131—Vehicle Axle. A. S. Frederick, Kirksville, Ill.
894,000—Vehicle Running Gear. L. B. Hart and C. I. Dupont, Plaquemine, La.
893,800—Adjustable Vehicle Axle. E. A. Hettick and J. I. Sharp, Dearborn, Mo.
894,003—Dumping Wagon. J. W. Hobson, Bayonne, N. J.
894,029—Vehicle Brake. J. G. Miller, Burlington, Iowa.
893,937—Wagon Box. J. B. Pospeshill, Detroit, Mich.
894,052—Safety Device for Occupants of Vehicles. R. Radtke, Suhl, Germany.
893,655—Cushion Tire. C. L. Rempes, Akron, Ohio.
894,074—Vehicle. W. N. Snow, Snowville, N. H.
893,672—Tire for Vehicle Wheels. R. O. Stutsman, assignor to Bartholomew Company, Des Moines, Iowa.

Copies of above patents may be obtained for fifteen cents each, by addressing John A. Saul, solicitor of patents, Fendall Building, Washington, D. C.

RECENTLY EXPIRED PATENTS OF INTEREST TO THE VEHICLE TRADE.

Patents Expired July 14, 1908.

455,730—Vehicle Body. S. R. Bailey, Amesbury, Mass.
455,764—Two Wheeled Vehicle. V. Parks, Fort Wayne, Ind.
455,806—Thill Coupling. F. G. Tallerday, Poplar Grove, Ill.
455,831—Road Cart. J. A. Kirkpatrick and G. W. McDaniel, Anthony, Kan.
455,843—Thill Coupling Clip. C. C. Tilghman and J. N. Goldsborough, Carmichael, Md.
455,860—Road Cart. L. M. Smith, Romeo, Mich.
455,861—Draft Equalizer. J. G. Stowe, Kansas City, Mo.

Patents Expired July 21, 1908.

456,181—Vehicle Pole. G. White, Rock Island, Ill.
456,218—Wheel. H. C. Goodrich, Chicago, Ill.
456,319—Dumping Wagon. J. M. Stoner, Denver, Colo.
456,321—Vehicle Tongue Support. G. Allen and J. Sandhofer, Auburn, Cal.
456,406—Spring Equalizer. M. T. Foster, Piedmont, Kan.

Patents Expired July 28, 1908.

456,556—Dust Cap for Vehicle Axles. J. P. Cutler, Rock Springs, Md.
456,565—Sulky. W. D. Harper, Quanah, Tex.
456,581—Road Cart. J. B. Mercereau, Rochester, N. Y.
456,766—Vehicle Axle. A. Johnson, Camillus, N. Y.
456,868z—Dumping Wagon. U. S. G. Warner and L. D. Warner, South Bend, Ind.

Patents Expired August 4, 1908.

456,935—Axle Cutter. F. E. Beardsley, Traverse City, Mich.
457,001—Wagon Brake. A. W. Miller, Capon Road Depot, Va.
457,042.—Hub Attaching Device. Wm. Brooks and H. Koch, Bible Grove, Ill.
457,046—Whiffletree. C. C. Forncrook, Hermitage, N. Y.
457,287—Two Wheeled Vehicle. J. W. Moon and C. Moon, St. Louis, Mo.
457,297—Two Wheeled Vehicle. G. E. Bartholomew, Cincinnati, O.

The above list of patents of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City.

When you think others more fortunate than yourself sit down and look over the way you spend your blessings.

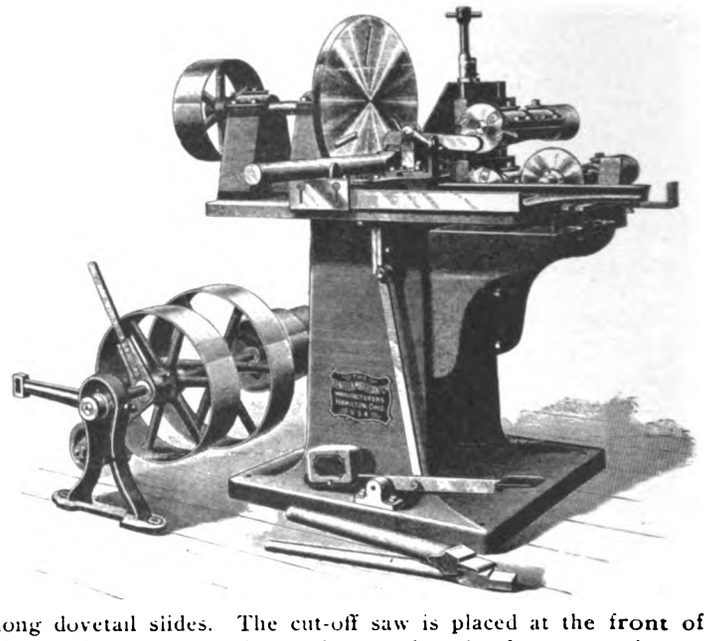
PLANT OF OMAHA WAGON CO. BURNED.

Fire completely destroyed the plant of the Omaha Wagon Company, located in East Omaha, Neb., on August 24th, involving a loss of about $70,000. The cause of the fire, which also destroyed an adjoining factory and some freight cars, is unknown. The Omaha Wagon Company has been organized about four years, and the president and principal stockholder is O. F. Schee, of Oskaloosa, Ia. The principal business has been that of mnufacturing wagon boxes, scoop boards and end gates. It was closed during the winter, but reopened March 1. The stock on hand was valued at $30,000, fully insured, and the building, belonging to other parties, was valued at $40,000, partly insured. East Omaha has but meager fire protection, so the plant was practically destroyed before the Omaha fire department could give the needed assistance.

SPOKE CUT-OFF RE-TONING AND FACING MACHINE.

Stock spokes are made with the tenon of full size or heavier than necessary, and before they can be driven into the hub they must be cut down to the proper length and thickness, and for this purpose this machine has been brought out by The Bentel & Margedant Co., Hamilton, Ohio, U. S. A.

In order to save time and rehandling of the spokes the machine is furthermore equipped with a facing disc and clamp so the entire spoke can be finished in one operation. The spoke is held securely in a clamp which works back and forward on



long dovetail slides. The cut-off saw is placed at the front of the machine and is adjusted for any length of tenon or it can be entirely removed if so desired.

The two tenoning heads have an independent adjustment up and down for various thicknesses of tenons and are carried on steel mandrels running in long, heavy boxes. After passing the spoke through between the heads it is carried against the facing disc and one side is properly faced. It is then turned over and the other side is faced in a like manner, provisions being made through a sliding stop for facing the spoke to its proper thickness.

The facing disc carries three knives set at such an angle so as to produce a shear cut across the face of the spoke. The machine is adapted for the lightest as well as the heaviest spokes.

NEW PLANT FOR WAGON FIRM.

The Davenport Wagon Company, of Davenport, Iowa, has purchased the old gas plant in that town for $27,000, which will be rebuilt and utilized for the construction of wagons.

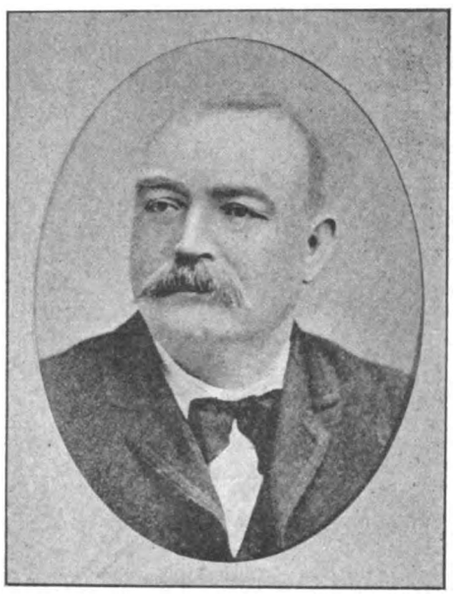
Digitized by Google

OBITUARY

John Reilly.

John Reilly, an old-time and well-known patent leather tanner of Newark, N. J., died on August 22, of apoplexy, with which he was originally stricken in February last. At that time he was taken to his summer home at Avon, N. J., and seemed to improve for a while until he was stricken with a second attack in May. The third stroke came on August 16 after he had enjoyed an automobile ride, and in spite of the best efforts of physicians and trained nurses he did not recover.

Mr. Reilly was born in Ireland seventy-four years ago and came to this country with his parents in 1843. When a boy he began his long career in the leather trade and in 1865 started



John Reilly.

a small tannery of his own in Newark, on which site the large plant of the corporation bearing his name now stands. The John Reilly Co., of which deceased was head, are manufacturers of enameled and patent leather for carriage, saddlery, harness and other purposes.

Mr. Reilly was always active in his business until four or five years ago, when on account of failing health he practically retired, and his son-in-law, Theo. S. Miller, became the active administrator of the company's affairs. He is survived by his widow, his son Barnard Reilly, and his daughter Mrs. Theo. S. Miller.

Clay W. Utley.

Clay W. Utley, aged 54 years, a prominent resident of Waterloo, N. Y., died at his home, August 17, after suffering for a few days with progressive paralysis. Mr. Utely, who was a travelling representative of the Waterloo Wagon Company.

Valentine Evans.

Valentine Evans, who for the past eighteen years has conducted a carriage painting and repairing business in Orange, N. J., died recently. The deceased was born in England in 1835, and is survived by a wife and six children.

John Dohse.

John Dohse, president of John W. Masury & Son, paint and varnish manufacturers of Brooklyn, died of an abcess of the brain on September 2nd at his home in New York City. He was fifty-one years old and was born in New York. He was an Odd Fellow and a thirty-second degree Mason. Deceased was prominent in the business world, being second vice-president of the Terminal Bank in Brooklyn, and formerly director of the Williamsburg Trust Company. He was also an ex-president of the Paint, Oil and Varnish Club of New York.

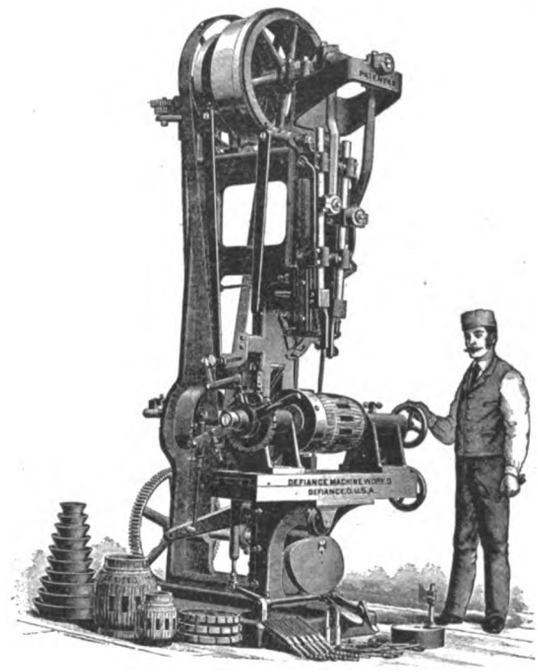
AUTOMATIC DOUBLE CHISEL HUB MORTISING MACHINE.

Hub mortising machines were first introduced in the States in the year 1868, since then passing through many stages of patented improvements, reaching the highest standard as a labor-saving machine for hub and wheel making, reducing the cost fully one-half, and performing the work more accurately than by any other method.

The modern automatic double chisel hub mortising machine, with boring attachment, as represented by the accompanying engraving, and built by the Defiance Machine Works, Defiance, Ohio, is the largest sized machine of its class built, and is used for mortising or re-mortising hubs from 3 ins. to 17½ ins. diameter, cutting mortises in hard wood, from the smallest sizes to 2¼ ins. wide, 5½ ins. long, either straight or stagger, covering all the requirements of wagon, heavy truck, and artillery wheel builders.

The column is cast in one piece, and provided with a broad base to stand firm, with the driving power at the top, which is controlled by a combined hand and foot lever. The operator, in placing his foot upon the pedal, instantly starts the boring or mortising departments as desired; each acting independently, entirely avoids the constant running of such parts of the machine as are not engaged in service.

The chisel bars, of steel, large diameter, are arranged side by side upon the front of the frame, their axis being on a vertical



plane at right angles to the crank shaft. Each chisel bar is adjustable, for giving the mortise desired dish and taper.

The horizontal boring spindle is conveniently fitted through the main frame with a universal chuck for securing the bit, having adjustments to bore holes for straight or stagger mortises. The center of the auger and hub agree when the bed is at its lowest position.

The hub to be mortised is held at one end in a three-jawed universal chuck, the jaws acting simultaneously by turning with a key any one of the screw heads, the other end turning in a taper cup, and is automatically presented to the action of the chisels by a vertical movement of the bed. When the mortise is cut, it descends by its own gravity. The jigging, spacing, feeding, etc., are entirely automatic in their movements, thus rendering it easy for one operator to run two machines, besides affording him ample time to arrange his hubs for prompt insertion into the machine, and produce the mortising of four hundred hubs per ten hours.

Digitized by Google

Trade News From Near and Far

BUSINESS CHANGES.

D. H. Sextrol has purchased the vehicle and implement business of Girard & Dean, in Marysville, Kan.

Patterson Bros. & Hathaway have purchased the implement and vehicle business of the C. V. Nichols Implement Co., in Fort Morgan, Colo.

J. D. Hines has been succeeded in the vehicle and hardware business in Meriden, Kan., by Hines & Prentice.

Schell & McCall have sold their business in Iola, Kan., to E. P. Brigham.

James R. Adams has sold his vehicle business in Lufkin, Tex., to R. A. Campbell.

A. R. Bradfield has sold his buggy business in Altamont, Kan., to J. H. Rust.

Peter Clarken has sold his vehicle business in Page Center, Ia., to J. D. Jordan & Sons.

J. W. Risk has purchased the Hengstler stock of vehicles in Battle Creek, Neb.

Ruechel & Miller have succeeded Laudermilk & Ruechel in the vehicle business in Loveland, Colo.

Theo. Kuerlin, of Wahoo, Neb., has sold his vehicle business to C. A. Lewis.

D. G. Ross has disposed of his vehicle business in Milton, Ore., to J. M. Newman.

C. J. Pogue has been succeeded in the vehicle business in Shelbyville, Ill., by J. H. Foster.

J. A. Dick has bought the vehicle business in Luray, Kan., of C. A. Griffith.

John J. Lynch, of Elkton, S. D., has sold his buggy and implement business to Frank Krueger.

Anton Hynden, of Hills, Minn., has purchased the implement and vehicle business of A. E. Green, in Florence, S. D.

W. E. White has sold his interest in the implement and vehicle firm of Wright, White & Co., in Newberg, Ore., to C. N. Mackie.

Laws & Schermerhorn have succeeded Lindquist & Schermerhorn in the vehicle business in Brookville, Kan.

A. J. Maylot has purchased the retail implement and vehicle business of Andrew Overstad, in Hancock, Minn.

C. T. Wing has sold out his stock of hardware and vehicles in Burchard, Neb., to A. Ruegge, of Table Rock.

Labor & Wordy have sold their stock of vehicles, etc., in Creston, Wash., to Gross & Vincent.

McGray & Rose have succeeded to the vehicle business of O. F. McGray, in Douglas, N. D.

C. H. Duckworth has sold his buggy business in Wymore, Neb., to J. N. Guernhart.

F. E. Parks has sold his buggy business in Coffey City, Kan., to Frank Seeley.

Olaf Peterson has sold his stock of vehicles, etc., in Swea City, Ia., to Warburton Bros.

William Dawson, Belvidere, Ill., has sold his wagon business to Charles Fredrickson.

NEW FIRMS AND INCORPORATIONS.

The Hamilton-Bacon-Hamilton Co. is reported about to engage in the vehicle manufacturing business in Bristol Va.

The Cooper Carriage Woodwork Co. has been incorporated in St. Louis, Mo., with a capital stock of $70,000.

Hackney Bros., of Wilson, N. C., are about to establish a carriage factory in Washington, N. C.

Beckman & Shroeder have engaged in the vehicle business in Emmetsburg, Ia.

John L. Johnson, a hardware dealer of Spokane, Wash., is putting in a line of buggies and implements.

Anderson & Peterson are about to open a stock of vehicles and implements in Veblen, S. D.

E. L. Peterson has opened a new stock of buggies and implements in Ponca, Neb.

The Pyle & Roberts Vehicle Co. has been incorporated in Emporia, Kan.

Miller & Bronson have just engaged in the implement and vehicle business in Quinn, S. D.

R. W. Rockford and O. H. Lent are about to open a stock of vehicles, hardware, etc., in Arkansas City, Kan.

W. L. Miller is putting in a line of vehicles in Julesburg, Colo.

The Joliet Wheel Manufacturing Company has been organized at Joliet, Ill., with a capital stock of $40,000. The incorporators of the new company are Joseph M. Lotimer, E. L. Kern, and John R. Dehl.

FIRES.

The plant of the Miller-Karwisch Wagon & Buggy Co., in Atlanta, Ga., has been damaged by fire.

The carriage shop of W. Z. Burke, in Thornton, Ind., has been destroyed by fire.

MISCELLANEOUS.

A. A. Kopp is building a three story addition to his carriage factory in Mifflinsburg, Pa.

G. G. Dodge is about to erect a carriage factory in Kenbridge, Va.

C. L. Jennings will establish a carriage and wagon factory in Crewe, Va.

RETIRED CARRIAGE BUILDER DIES.

Abraham Keck, retired carriage manufacturer of Allentown, Pa., succumbed on August 30 to a complication of diseases at his home in that city, aged 87 years, where he had resided for the past 60 years. He was born in 1821. He was engaged in the carriage building business in Allentown for many years. His widow who is nearing 90 years, still survives him with one son and an adopted daughter.

NEW TOP AND BODY CONCERN ORGANIZED.

The Broad Street Top Company has recently been organized in Philadelphia, to manufacture bodies and tops for vehicles, besides shields, aprons, etc. Incorporators are Henry H. Belknap, Frank L. Paxson and Maurice R. Dillin.

NEW SOUTHWESTERN MANAGER.

Mr. Jack H. Frost, of Texas, has been appointed southwestern manager for the Detroit White Lead Works. A warehouse will be operated for the convenience of the southwestern trade, and it will be located at Dallas.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

Regarding 1909 Models.

In noting the modifications in many of the cars to be marketed during the incoming season over last year's models, it is apparent that there are quite a number of modifications, all of minor importance from the viewpoint of the builders who have spent several months elaborating them. In some special attention has been placed to the position of the gear, with reference to other parts. Many builders have regarded this as beyond the necessity or possibility of change. In one or two the position of the cooling fan has been changed. The shutter valve on the air intake of the carburettor has been modified in the direction of the restriction of the air opening. A cellular radiator instead of a tubular is regarded by one or two as an improvement. An improved gasoline tank containing a reserve supply is also noted.

The automobile engineers are far from satisfied with the minute mechanical details of the standard cars of to-day, and yet, as stated in a previous issue, the fundamentals of construction are settled. The word shifting represents perhaps as well as any other one word the direction of thought and effort in present automobile development, shifting of parts within very circumscribed limits with the view of establishing that ideal of constructive skill, perfect reciprocity of parts and perfect reciprocity of action.

Right here a word by way of compliment to the American automobile builders. Those who have been critically observing the best work of Paris automobile shops will admit that they have less to learn from abroad than foreigners have to learn from us. The French builders appear to be giving more attention to outline and finish—in a word, to elegance, than they are giving to the minuse mechanical details which continue to absorb the attention of many of our American engineers. This is natural to the French, and yet in point of elegance, when it comes to sensible elegance, our builders have nothing to apologize for.

Outlook Good.

Advices from automobile manufacturers read well. Reports from several distributing agencies have the right ring. The first half of the year brought out a volume of business that was not anticipated at the opening of January. The signs of the times now that September is here are full of encouragement. The automobile press is full of the doings of clubs and associations concerning pleasuring tours and racings. Branch managers are sending good reports to their houses and manufacturers are pushing shop work as though the business depression was a thing of the past.

The automobile industry is by no means on the crest of the wave of prosperity, but every condition is favorable. More or less buying is postponed for a time. Managers of large branches and of the main houses say the dullness in demand is not so much due to lack of cash as to the spirit of conservatism which has taken possession of the community.

The view is justified by all the facts and conditions surrounding the industry that the next twelve months will be a period of increasing sales.

Automobiles in War.

Our government, like most governments, is giving some attention through its War Department to the possible utilities of the automobile for war purposes, with reference to the quick transportation of persons and supplies. These experiments have been conducted at the national camp at Pine Camp, New York, which covers a very large area of rough and difficult country. Of course the results will not be made known to the public at present. Interested observers note that the government officials in charge are in dead earnest and are apparently anxious to make the automobile prove itself to be worthy of a place in army maneuvers.

The German government has gone farther than any other government in its experiments. In fact, the tests have gone beyond experimentation, and though no formal announcement has been made as to its future policy with regard to the automobile, it is very clearly evident that it will be extensively used. Germany has the advantage of good roads, and hence it can more largely profit by the use of the car than countries where road conditions are an obstacle.

Harmony Needed.

The interests of manufacturers would doubtless be better served if the two factions or interests now seeking supreme control in the matter of racing could harmonize and have one grand event instead of two not so grand. There are two events now before the automobile public, the Savannah and the Vanderbilt. European automobilists recognize Savannah as acting in conformity with international rules. The manufacturers are not interested in petty differences among racing managers and they sincerely hope that harmony will be evolved, but as it looks now there will be two races, the Vanderbilt, over the Long Island Parkway, October 24, and the Savannah races, November 26.

The Long Island Parkway will be 65 miles long and cost $2,000,000.

Testing.

A new dynamometer has been introduced in one or more automobile plants, which as a testing device along strictly scientific lines overcomes many obstacles in accurate testing heretofore encountered. It shows the torque exerted by the engine in pounds, also loss of compression, poor firing or bad mixture. These are certainly valuable results to be automatically ascertained, and with mathematical exactness. The science of testing

Digitized by Google

has not kept pace with other branches of automobile building, but this last device is a valuable means in that direction.

Hoods.

The business in manufacturing storm hoods and aprons has been improved wonderfully. The appearance of one or two new factories would have it appear that there are not enough already, though some existing plants are not over busy. The idea of protection during carriage or buggy occupancy has taken possession of the carriage using public. These convenient attachments are comfortable and prevent many a doctor bill.

Motor-Cycles.

The builders of motor-cycles are cultivating the field of motor-cycle delivery. These cycles are gradually finding favor among a class of small storekeepers who have only light parcels to deliver. The manufacturers who are pushing them believe there is a place for them in the delivery of certain lines of goods. There are florists, stationers, milliners, small dry good stores, grocers and a number of other small merchants who feel they can make business by the quick delivery of small parcels.

Commercial Trucks.

In harmony with the general tendency towards lower priced vehicles, the manufacturers of commercial trucks are managing to put on the market trucks of given capacity at prices somewhat lower than two or three years ago. As in the case of pleasure cars this effort to place trucks within the reach of a larger number of manufacturers is leading to a larger demand.

Will Give Dealers a Chance.

If the plans of a few large automobile builders are carried out dealers in vehicles and implements will have an opportunity of acting as automobile agents on a basis that will be worthy of their consideration. Vehicle dealers have not sought opportunities of this sort, being, as a rule, content with their customary business. Capacity has now reached such proportions that certain builders will be able to build for the trade and will seek the assistance of progressive vehicle dealers to that end.

The increase in the number of dealers or handlers of automobiles has recently formed the subject of some discussion in automobile associations. Measures are contemplated in some states looking to the ascertaining of who are entitled to be regarded as sellers. Just what occasion there is for this action does not appear in the published proceedings, unless it is that there are sellers who are not identified with existing associations. This is a matter for manufacturers to consider rather than associations. The more pushers for trade the better.

Uncle Sam is not always asleep when his eyes are shut. He has been having some of his small boys watch automobilists as they went whizzing over his roads. The dust raised by automobiles going at speeds ranging from five to sixty miles an hour has been caught and weighed. The old man wants to know how fast automobiles eat up his roads.

The latest record of extreme speed was made on the Brooklands track. Speed for 2¾ miles was at the rate of 120 miles an hour.

AMERICAN AUTOMOBILE STATISTICS.

The number of automobiles in the United States is estimated by the general manager of the American Motor Car Manufacturers' Association at about 145,000, of which about 47,000 were sold during 1907 at a valuation approximately of $100,000,000. New York City alone boasts of 20,000 automobiles. The number of automobile factories in the United States is stated by the same authority at 200, of which at least 125 may be said to be producing machines in quantities. The employees number 58,000, without including those engaged in making a great variety of accessories, large and small.

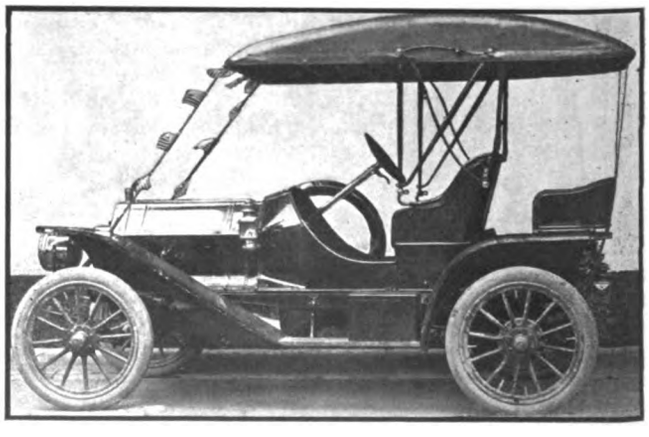
TWO NEW AKRON TIRE COMPANIES.

The Palmer-Hawkins Rubber Tire Co., of Akron, has been incorporated to manufacture rubber goods of all kinds, but the primary purpose is to put upon the market a new heavy motor truck tire patented by A. H. Palmer, who is president and general manager of the company. Mr. Palmer is president of the Akron city council, and he had many years experience in the rubber business, being actively engaged in the manufacture of both solid and pneumatic tires. His invention of this sectional tire is the result of years of constant study as to the best practical method of overcoming the difficulties encountered in the use of heavy motor truck tires. A. W. Hawkins, a prominent business man and manufacturer, is secretary and treasurer of the company. The new tire is regarded as having an important future.

Another new Akron rubber company is the Empire Rubber Manufacturing Co., organized by C. W. Wickline, M. G. Snyder, William J. Yeager, Forest Firestone, and Fred J. Gostlin. The company will make rubber goods, chiefly automobile supplies and rubber cements, at a factory at No. 200 East Exchange street, with offices in the Walsh block.

AUTOMOBILE TOP RUMBLE SEAT RUNABOUT.

The accompanying reproduction of photograph illustrates a top designed to cover a rumble seat runabout job, as manufactured by the Cortland Forging Company, Cortland, N. Y. This top is supported by two Duquesne bows, front and back, and is strapped regularly in front, the rear being fastened with a crossed strap. Top joints are used between the center bows.



In letting down the top the front and rear bows are shifted from the clips at the top of the bows to the eyes in the bottom forging of the bow socket.

The top is made with regular storm curtains and a rear curtain, which is not shown in illustration. It gives a very fine appearance to the popular rumble seat job, tending to make a rumble seat less conspicuous than when an ordinary top is used, and is bound to become very popular.

Digitized by Google

LATEST ADAMS-FARWELL MOTOR CAR.

Illustration of chassis accompanying.

The 1909 Adams-Farwell Model Nine is not unlike this company's leading model built since 1906. The changes are principally along the line of standardization in control and although no new innovations are announced the car bristles with unusual features as it has ever since it first made its appearance on the market in 1904.

The greatest change is in the transmission which is now a three speed selective sliding gear set with a double cone, cork insert clutch contained in a separate compartment of the same case. The clutch is now operated by an ordinary push pedal and the gear change lever is located at the side in the usual position where it works in a Mercedes type quadrant. A foot accelerator is provided in addition to the regular throttle lever on the wheel which in reality is not a throttle at all but a means of regulating the closing of the inlet valve thus effecting the variable compression motor control which is an old exclusive feature of the Adams-Farwell.

The same device for starting the motor from the seat that was brought out first in 1906 is used on this model. This device is a simple ratchet connected to a lever at the driver's seat. The variable compression control makes it possible to entirely relieve the compression when starting so that very little muscular effort is required. The motor is now rated at 50 horse power, having five cylinders of 5½ in. bore by 5 in. stroke.

Following is a brief outline of the many unusual features which distinguish this car from others, which are the same as in the past.

The motor is unlike others in that the cylinders revolve instead of the crank shaft which sets in a vertical position and is keyed to a bronze casting which forms both transmission case and motor base. The advantages gained by this construction are that the cylinders are automatically cooled by the revolution of the motor which acts as a centrifugal blower and the construction is greatly simplified in many ways.

The radial disposition of the cylinders about the shaft greatly reduces the size of the crank case which consists merely of two discs to which the cylinders are bolted. The top one of these discs also forms the inlet manifold pipe while the bottom disc carries a sleeve on which is mounted a bevel gear for the transmission of power to the gear box.

The cylinders all being located in one plane perpendicular to the crank shaft the connecting rods can all be attached to the same crank pin around which they interlock upon the same bronze bushing.

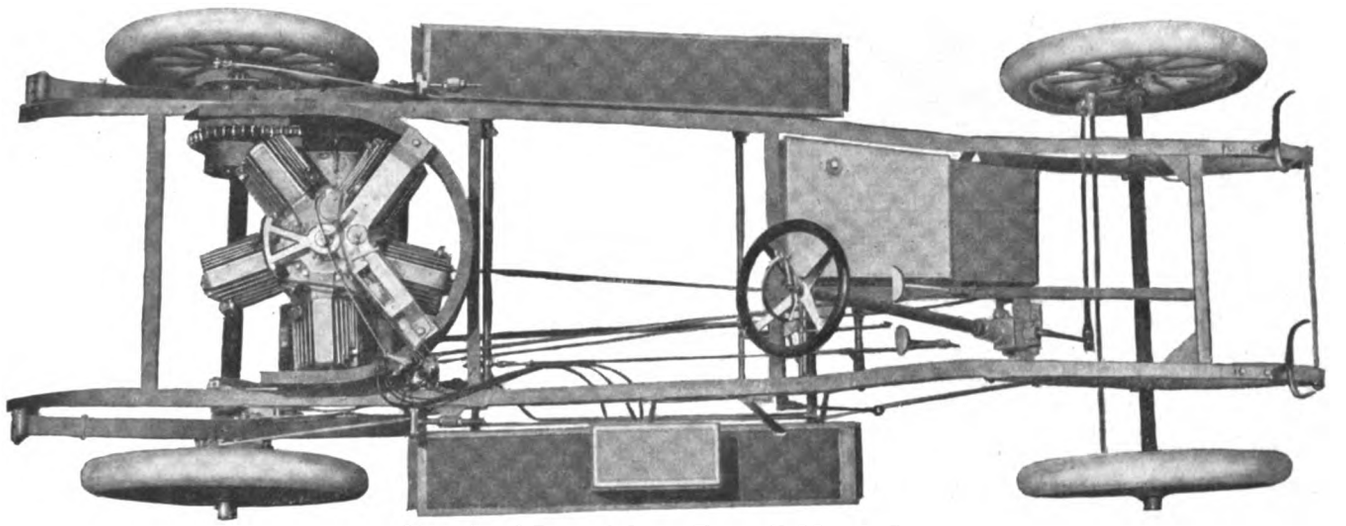
Other points gained by revolving the cylinders like the spokes of a wheel are that the valves are all operated by one cam located upon the hub of the motor and actuating a valve rod for each cylinder, while the electrical device is greatly simplified on account of the fact that the revolving cylinders form their secondary distributor requiring only a single coil and a single pole timer.

No fly wheel is required as practically the entire motor revolves thus accomplishing the desired effect with no addition of weight. This fact together with the elimination of a large number of parts that are necessary on other motors reduces the weight of the motor to a trifle over 300 lbs., which, according to the A. L. A. M. rating—60½ h. p.—is about five pounds per horse power.

The motor occupies so little space that it is concealed beneath the rear seat, leaving the hood and space under the front seat for storage space. This location of the motor reduces the loss of power in transmission and allows the rear seat to be set well ahead of the axle where the passengers can ride in comfort.

The riding qualities of the car are also improved by the gyroscopic effect of the motor, which, revolving in a horizontal plane, counteracts the vibration set up by rough roads.

Many advantageous points are claimed for this car, which is so radically different from others in its driving mechanism. The car complete is illustrated in the automobile section of this number.



Chassis of Late Adams-Farwell Motor Car.

Shown complete on page 223.

FIFTY AUTOMOBILES BURNED UP IN CHICAGO GARAGE FIRE.

More than fifty automobiles and taxicabs were destroyed last month in a fire which consumed a one story brick building in Chicago, occupied by C. A. Coey & Co., as a garage.

The fire started with an explosion and spread so rapidly that the building was almost entirely destroyed before the arrival of the firemen.

AUTOMOBILE NOTES.

The Crawford Automobile Co. has been incorporated in Crawford, Neb., with a capital stock of $10,000.

The Auto Co. has been incorporated in Wilmington, N. C., with a capital stock of $10,000.

The Mitchell Motor Car Co., of Racine, Wis., is building two additions to its plant.

Fred Newton Gibb and others have organized a company in Little Rock, Ark., to make automobile wheels.

The Foster Motor Car Co. has been incorporated in Richmond, Va., with a capital stock of $10,000.

Resolve that your business education shall be real and it will become so; make it a cheat and you will be the worst cheated.

Digitized by Google

NEW ITALIAN DEVICE INTENDED TO ABSORB SHOCKS AND SAVE TIRES.

A remarkable invention, an axle and wheel connection device, has just been put forward by Signor Luigi Granieri, of Rome, Italy. It is one of the extremely rare examples in which a mechanical device, the result of close scientific study, is both practical and simple.

This axle and wheel connection is adapted for use with any vehicle designed for high speeds, and particularly automobiles. Even the most enthusiastic automobilist must admit that the wheels are still very imperfect. In order to prevent delicate yet powerful engines from getting out of order and even breaking, to preserve the occupants of automobiles from the continuous vibration, which under high speeds may become dangerous, and finally to minimize the jolts the machine is subjected to in racing, wheels of high resilience are absolutely necessary. Such elasticity, however, is not to be satisfactorily attained by the pneumatic tires hitherto used, as the rubber covers, in order

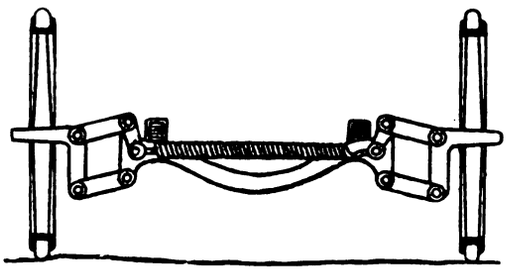


Fig. 1.—Spring Under Tension.

to protect thoroughly the air tubes against punctures, must be so stout as to reduce materially the elasticity. On the other hand, tires more particularly designed for elasticity fail to meet the other requirement, namely, protection against punctures.

Another objection to the use of pneumatic tires is their high cost as compared with the short time they last, not to speak of the real danger involved in the sudden bursting of the tires under full speed.

In these circumstances Signor Granieri's invention, by which the desired resiliency is obtained without affecting the wheels, is a noteworthy one. The rigidity of the wheel supporting axles of iron or steel used with vehicles of any kind is lessened by providing near their wheel supporting ends pivotal connections

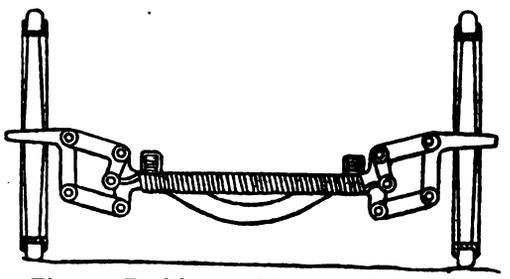


Fig. 2.—Position at Moment of Shock.

in the form of steel parallelograms, the four corners of which are pivotally movable, with a rigid arm at the inner top corner, one end of which is connected to the corresponding upper end of the arm of the opposite parallelogram by a powerful spring under tension.

Under the weight of the frame or body of the vehicle the said axle is depressed, and if it were of one rigid piece it would necessarily transmit the weight to the road wheels, which in turn would transmit by their resistance the blow thus received to the axle, the vehicle and its inmates, and also the jolts due to unevenness or other obstacles met with on the road.

In the Granieri device, however, the axle being swivelled, pressure from above and jolts from below are nullified by the movable parallelograms which under such strains are compressed, then are immediately restored to their normal shape by the action of the above mentioned spring.

All this is surprisingly clear, easy and simple, but, what is more, has also proved a practical success.

Automobiling, thanks to the Granieri device, has become a real pleasure, without shocks and jolts, or the risk of being suddenly thrown out of the automobile. Racing with machines provided with it run as smooth as flying. Long runs have been

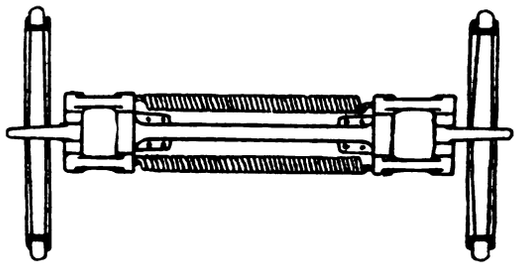


Fig. 3.—Plan View.

made with these improved wheels on the most difficult roads and under very heavy loads, with speeds up to eighty kilometers per hour. But to the travellers the way seemed short, the speed moderate and the fatigue nil. Tests have been made with an automobile belonging to a doctor who is working with Signor Granieri. The four views presented herewith despict the action of this new mechanical arrangement.

Among the numerous advantages consequent upon the use of the Graneiri invention may be mentioned the following:—Less rubber tires and benzine will be consumed; greater regularity as regards speed; no further necessity to slow down in difficult

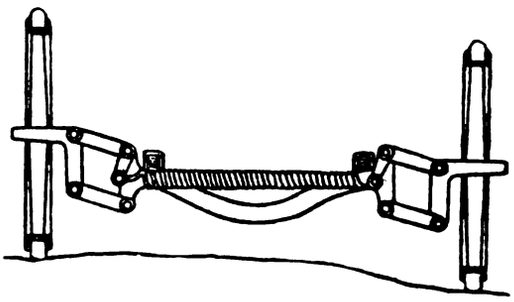


Fig. 4.—Spring in Action, Obstacle on One Side.

or rough roads; no increase of cost in building automobiles, and the absolute elimination of accidents due to the bursting of pneumatic tires.

A company has been formed in Rome to engage in the manufacture of the device.—From the European edition of the New York Herald.

FEATURES OF THE EUREKA MOTOR BUGGY.

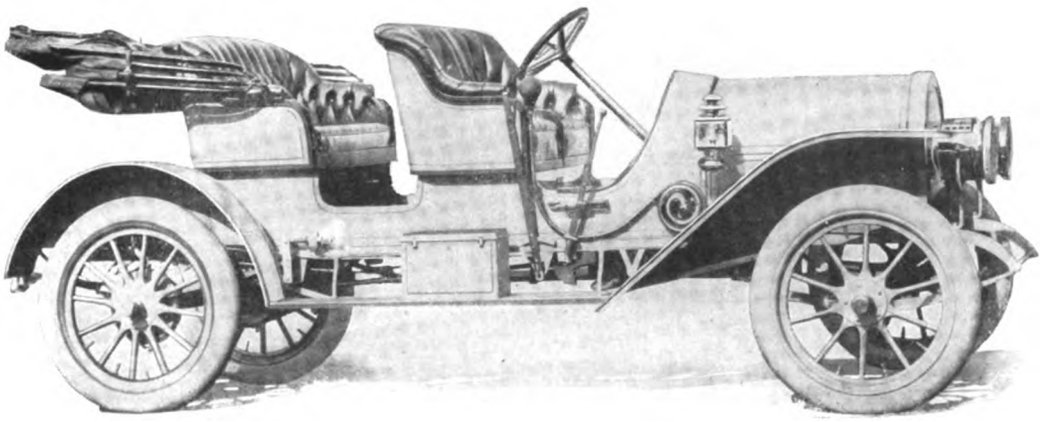
Illustrated on page 224.

The power of the "Eureka" is transmitted through a transo-differential gear. As its name implies, this device combines the purpose of the transmission and the differential of a machine. The drive is by means of a friction disc and the work of the differential is accomplished by dividing the driven pulley into two distinct and independent halves, revolving on the same axis and driven by the same disc, independently, and each connected to a rear wheel by a side chain. In turning a corner, the power is transmitted to the wheel, giving the least resistance on the ground—in other words the wheel describing the greater circle—causing its driving pulley to run ahead of its twin and causing the slower pulley to slip on the face of the driving disc. A more simple and durable disc than this one is not manufactured.

The engine is two cycle, two cylinder, ten horsepower, air cooled and valveless. Wheels are 36 in. and 38 in. and wheel base is 79 in. The chassis frame is made of angle steel. Body is mounted on four elliptical spring, assuming easy riding. Speed is from one to twenty-five miles.

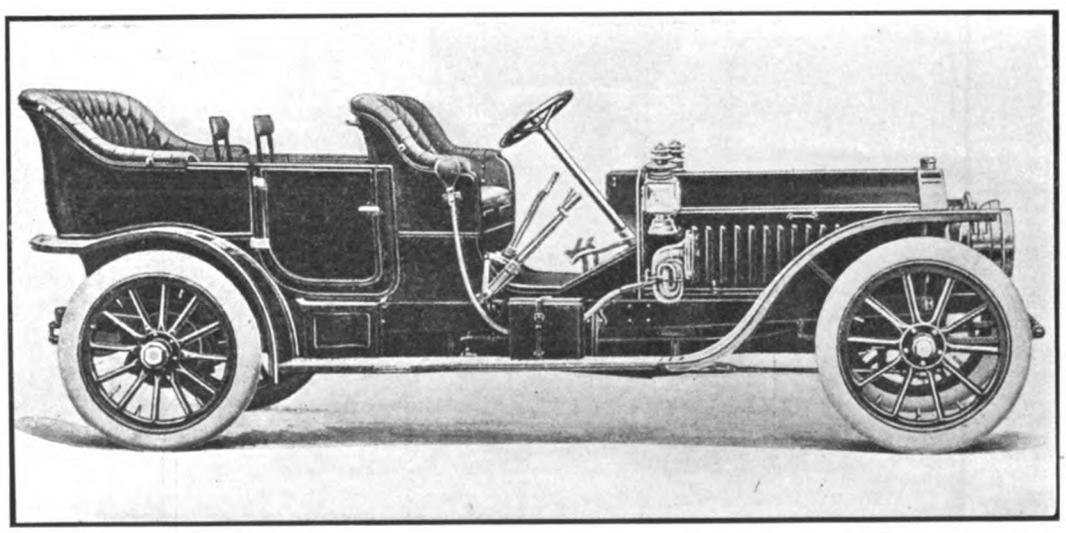
Digitized by Google

Illustrated Automobile Section, September, 1908



ADAMS-FARWELL FOUR-PASSENGER MODEL.

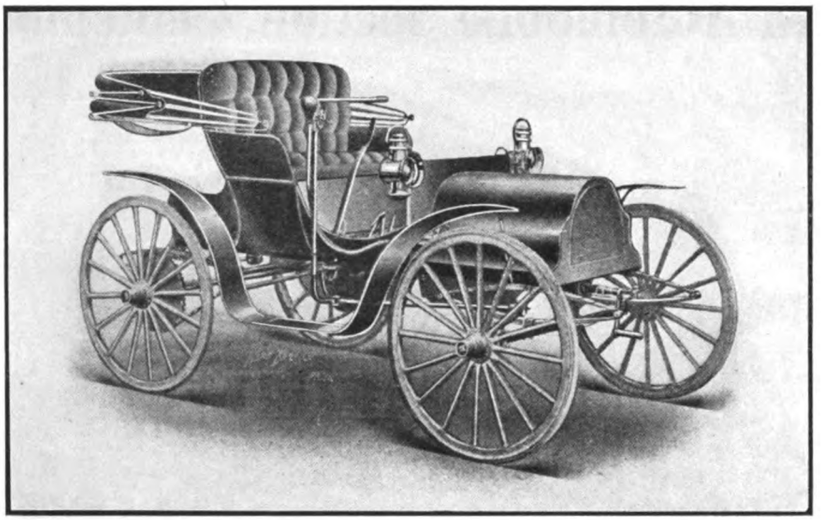
Described on page 221.



PEERLESS SIX-CYLINDER 1909 MODEL.

Capacity, Seven Passengers.

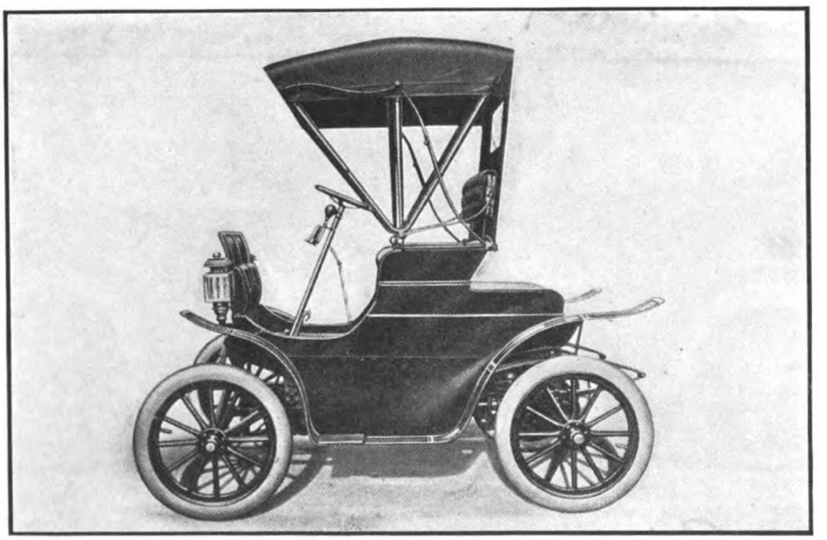
Digitized by Google



EUREKA MOTOR BUGGY.

Described on page 222.

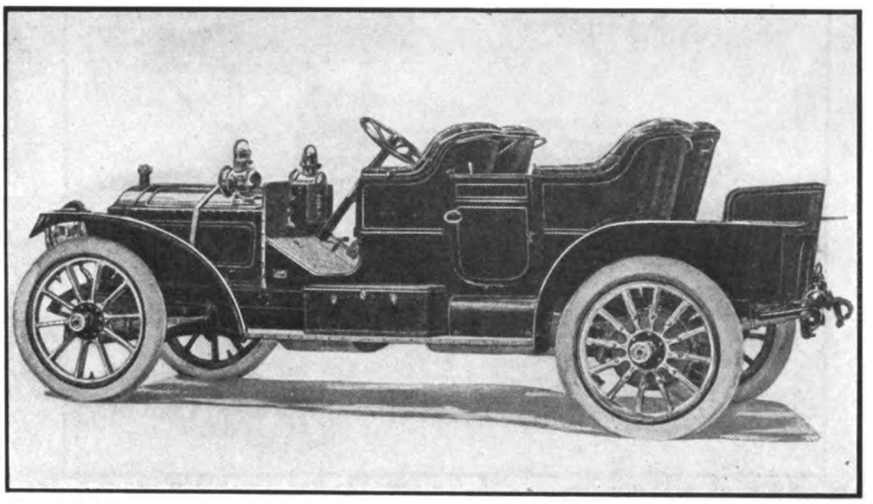
Built by Eureka Motor Buggy Co., Beavertown, Pa.



JEWEL SPECIAL RUNABOUT.

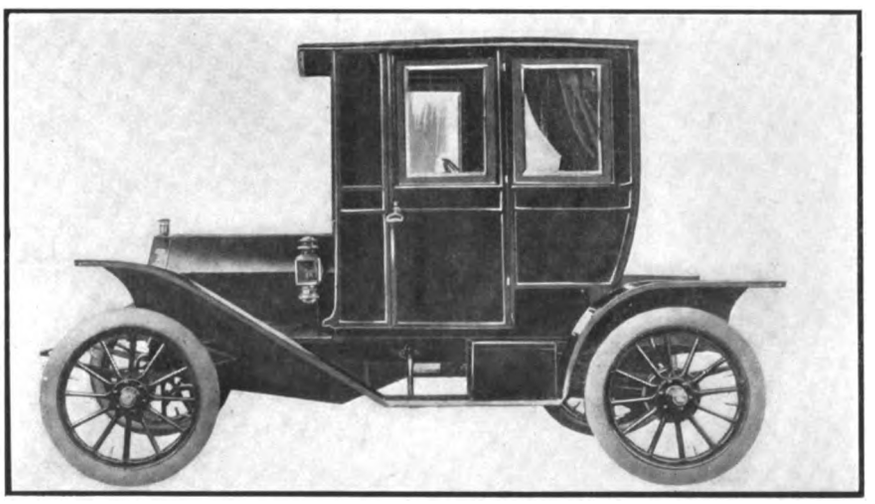
Built by The Forest City Motor Car Co., Massillon, Ohio.

Digitized by Google



PACKARD THIRTY 1909 MODEL.

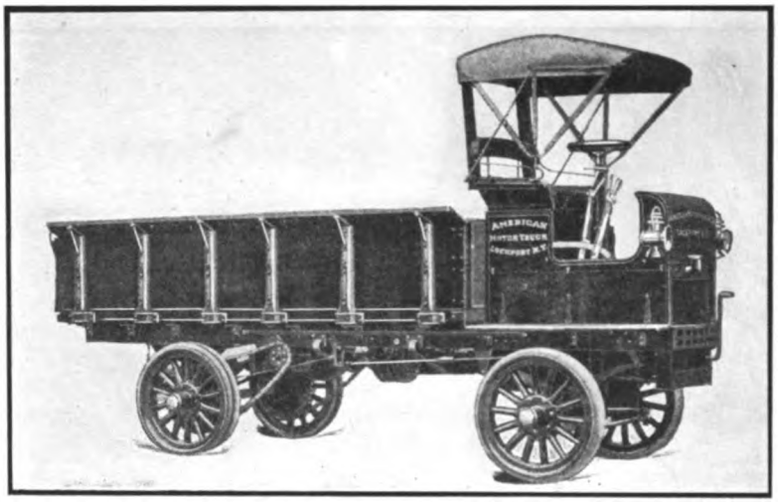
Built by Packard Motor Car Co., Detroit, Mich.



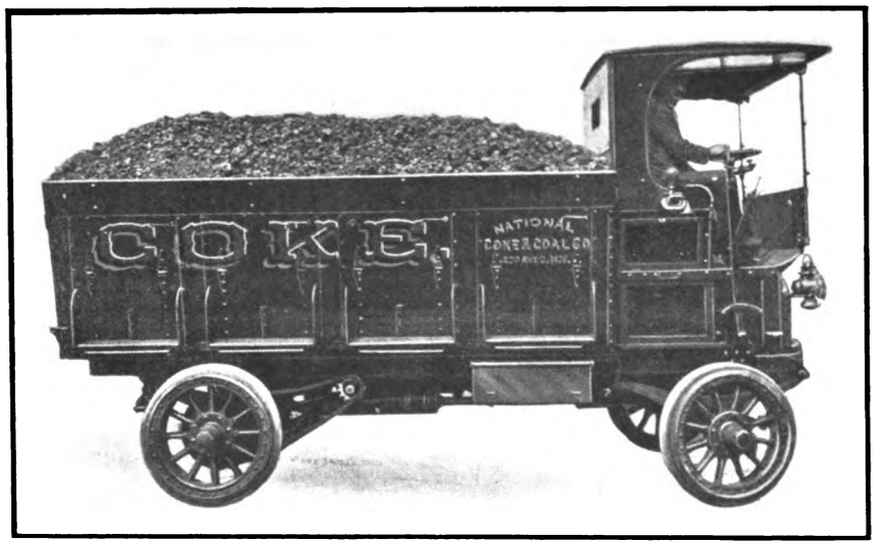
INSIDE DRIVEN MOTOR CAR.

Built by The Overland Auto Co., Indianapolis, Ind.

Digitized by Google



FIVE-TON COMMERCIAL CAR.
Built by American Motor Truck Co., Lockport, N. Y.



FOUR-TON COAL TRUCK.
Built by Mack Bros. Motor Car Co., Allentown, Pa.

Digitized by Google

RESILIENT WHEELS FOR AUTOMOBILES

Several New Devices Which Aim to Make the Automobile Safer and Cheaper to Keep

Of late the trend of thought among inventors, as demonstrated by the many patents granted, is in the direction of devising an automobile wheel which will curtail tire expense and reduce the liability of accident, by overcoming possible bursting of tires.

In this article we have gathered together those patented during the last two months, and place them before our readers in a concise form, so that they may be readily studied and their various features compared and considered.

Many forms of construction are presented, but they all have the same object in view, namely, to overcome the danger, annoyance and expense of pneumatic tires and still retain their yielding qualities. In Fig. 1 is illustrated a wheel provided with an improved rim, which constitutes of itself a yieldable tire supported by yieldable spokes to supplement the yieldable qualities of the rim.

This wheel includes a hub having external annular shoulders, and midway between which is an external annular flange, integral with the hub. At regular intervals the outer periphery of the flange is provided with sockets, which are preferably threaded for the reception of a threaded spoke member. This spoke member is tubular and telescopically receives another spoke member which is provided upon its outer end with a yoke or fork disposed transversely to the wheel and designed to form a seat for the rim. A helical spring embraces the spoke and bears

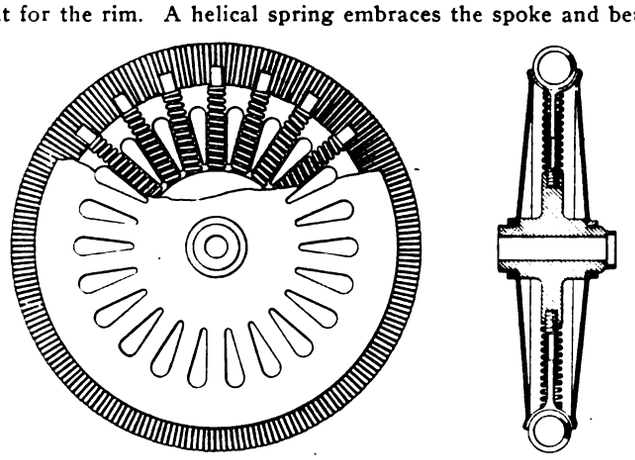


Fig. 1.

in opposite directions against the flange and the seat or yoke, thereby to yieldably maintain the outer spoke member at its outer limit.

The rim of the wheel consists of a wire helix of cold drawn wire, having its coils or whirls circular in form and lying in contact with one another, said rim being received within the seats or yokes, whereby the rim is yieldably supported by the yieldable spokes.

At each side of the wheel there is a metallic shield threaded to hub portion. The shield is in the form of a yieldable disk of such diameter as to have its outer flared peripheral portion bear against the adjacent ends of the seats and the helical rim to maintain the rim centered upon the wheel, and also to form a brace to take lateral strains from the spokes. It is of course to be understood that there is no positive connection between each shield or brace and the rim, as it is necessary to have the rim yield radially, and it must therefore be independent of the braces. To reduce weight, each shield member is provided with radial slots.

Fig. 2 presents another form in which the outer rim or tire is secured to the hub by a set of spiral spring spokes and a resilient cushion. The particular form of wheel involving this invention comprises a hub with a cylindrical sleeve adapted to fit the axle and carries a flange integral therewith to which the spokes of one side are secured. The cylindrical sleeve also carries a much larger annular flange, strengthened by braces and serving to form one side of the recess within which lies the resilient packing. At the base of this flange is an offset portion of substantially the same thickness as the resilient packing and

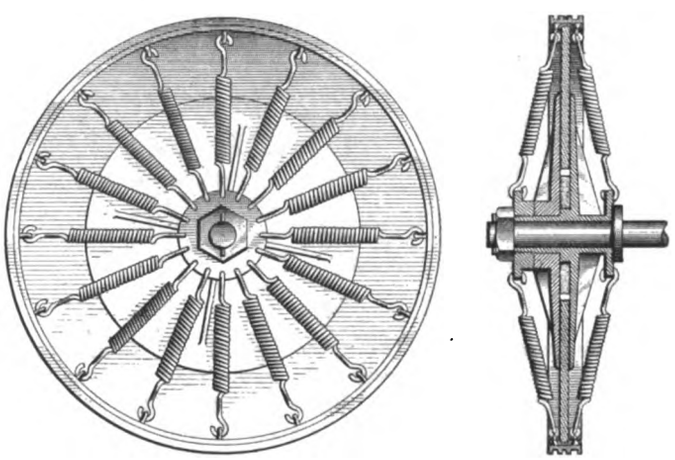


Fig. 2.

against which abuts a second flange. This second flange is carried by a collar, sliding on the cylindrical sleeve of the hub, and is spaced from the flange by the offset portion.

For holding the flange and its collar in place, a nut screw-threaded on the end of the sleeve of the hub, is provided and adapted to force the collar against the offset portion and bind the latter rigidly in place. This nut carries a flange the same diameter as the one at the rear. Both of these flanges are provided with perforations around their circumferences and to which the spokes are attached.

Between these two central flanges is placed the resilient packing, which latter may be of any suitable material, but preferably of rubber. Surrounding this packing, but normally out of engagement therewith, is an annular plate having shrunk on its outer circumferential edge an inner tire, which latter is provided with a series of eyes, riveted thereto and into which the ends of the spokes are secured. The main body of each spoke

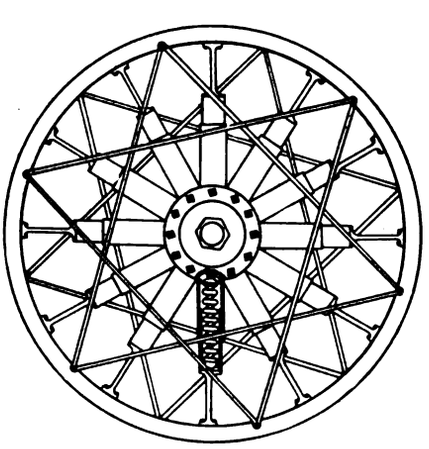


Fig. 3.

Digitized by Google

constitutes a coil spring, whereby its length may be varied as the vehicle passes over obstacles in the road.

Surrounding the inner tire and shrunk thereon is a solid surface tire, preferably having a plurality of grooves extending entirely around the tire to prevent the same from slipping on smooth or slippery roads and affording a better working surface.

In this improved wheel the entire weight is normally borne upon the coil springs, the cushion serving merely as an auxiliary

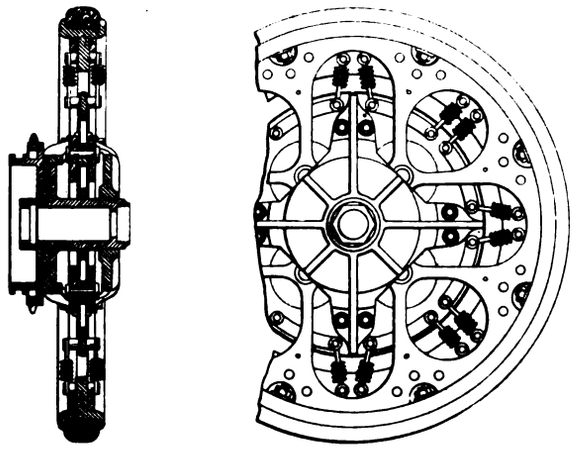


Fig. 4.

shock absorber, so that the vehicle is relieved from jars to a much greater extent than when the entire load is borne upon a single pneumatic tire. The plate closely fitting between the flanges, and having the inner tire secured thereto, prevents any possibility of the wheel being crushed sidewise and insures the stiffness and stability of the same, while the flanges which inclose this plate are rendered perfectly secure and firm by the braces.

In carrying out the construction of wheel, as shown in Fig. 3, the hub is formed with holes for the reception of the ends of the connecting member which acts as a rocker having nuts threaded thereon for holding it in place, the said member has a threaded portion on which is threaded one end of a spoke, the said spoke being made in three parts, the large tubular portion, the smaller tubular portion and the arm which is secured to rim.

The spring is placed within the tubular portions of the spoke,

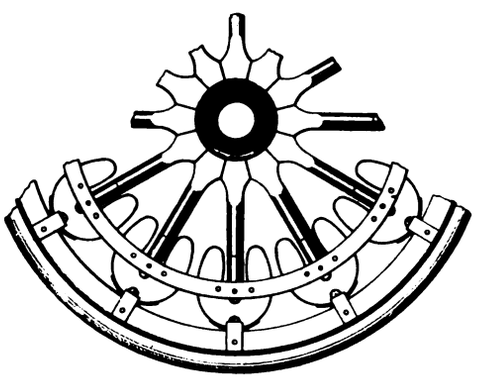


Fig. 5.

one end resting against one of the members, the other end aginst the other, thus regulating the sliding movement.

In Fig. 4 is shown a wheel whose outer rim portion is made in the form of a circular band or annulus of metal having a grooved perimeter adapted to receive a rubber or other tire in a well known way and which is provided with a thin centrally arranged and inwardly directed annular flange or web portion integrally produced upon and extended around it.

The flat circular discs are fitted inside of the rim, and are secured flush upon opposite sides of the web or flange by means of rivets or like fastenings. The central portions of these side members are held spaced apart from each other by means of spacing devices extended across the space between them at suitable points, bolts being passed through the said members and spacing devices as clearly shown.

At suitable points the respective side members have registering apertures produced in them, and said apertures are so disposed in the said members as to produce at the central portion of each member portions extended at angles to each other somewhat after the fashion of the spokes of an ordinary wheel. Each side member is also provided with a central circular aperture, concentric with the rim portion of the improved wheel and adapted for the passage of the hub which, as herein shown, is of less diameter than said central apertures, so as to permit of a certain extent of movement without contact upon the side members.

At the registering apertures there are arranged spiral springs, of which two are provided at each pair of registering apertures, the said springs being arranged to bridge or extend across the annular space separating the web portion of the wheel rim from the prevailing form of inflated tire wheel, the improvement to said portion while their inner ends are connected with projections upon the sides of the inner disk-like member in such a way as to afford resilient connections for holding the inner disk-like member and the hub elastically supported within the wheel rim during use of wheel.

Fig. 5 presents a style of wheel which can take the place of

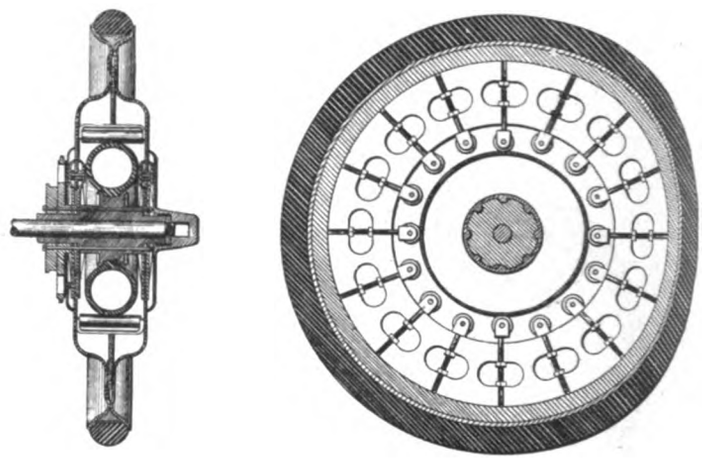


Fig. 6.

the prevailing form of inflated-tire wheel, the improvemnet being adapted for light and heavy vehicles, and dispenses with the inflated tire, substituting cushioning device which shall be disposed as nearly as possible along the outer rim of the wheel so that its effects shall resemble as nearly as possible those of the inflated tire.

In the event of the breaking of any spring, the same may be readily renewed by the removal of the pins or screws, and a new spring substituted in a few moments. The springs being coupled directly to the rim, their cushioning effect is on the order of an inflated tire commonly in use. The springs, while having their ends secured along a circle defined by the outer ends of the spokes, certain portions of the springs extend interiorly to said circle, this arrangement insuring the desired flexibility and reducing the stiffness of the spring to a minimum.

The type of wheel illustrated in Fig. 6 is of that variety in which an inflated cushion is arranged between a hub section and a rim section that are adapted to move relatively to each other in a vertical plane.

The construction of this wheel is as follows: The hub is provided with a central flange or enlarged portion having a plurality of recesses formed in its periphery. Around the portion of the hub is located a pneumatic tube or cushion provided on its inner surface with a plurality of lugs or projections that rest within the recesses formed in the portion of the hub and thus prevent the pneumatic tube from creeping on the hub.

Digitized by Google

A plurality of openings are formed in the plates to reduce the weight of the wheel and also permit the operator to manipulate the adjustable bearing members. These bearing members consist of rollers mounted in brackets that are provided with threaded stems which are journaled between the plates and provided with nuts which bear against the edges of the openings, as shown. By manipulating these nuts the rollers can be moved toward and away from the center of the wheel to carry them into and out of contact with the pneumatic cushion. As shown in the drawings, a plurality of these bearing members are ar-

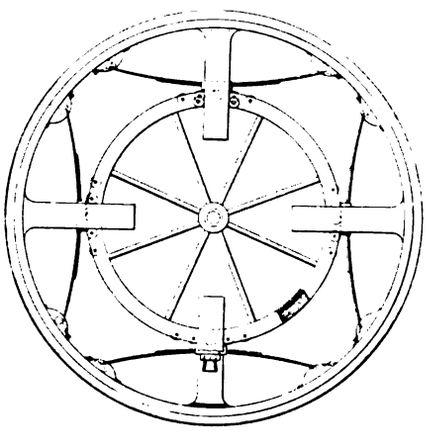


Fig. 7.

ranged around the periphery of the pneumatic cushion so that certain of said bearing members may be moved into engagement with the pneumatic cushion for a certain length of time and then moved out of engagement with the cushion and a different group or set of the bearing members be moved into operative position, so as to prevent excessive wear on the cushion, as would be apt to occur if the bearing members engaged the cushion always at the same points.

Fig. 7 represents another style of resilient wheel, which embodies improvements over a former patent. Referring to the drawing the wheel comprises a central structure consisting of the hub, the felly and the spokes, as well as a rim and tire, pref-

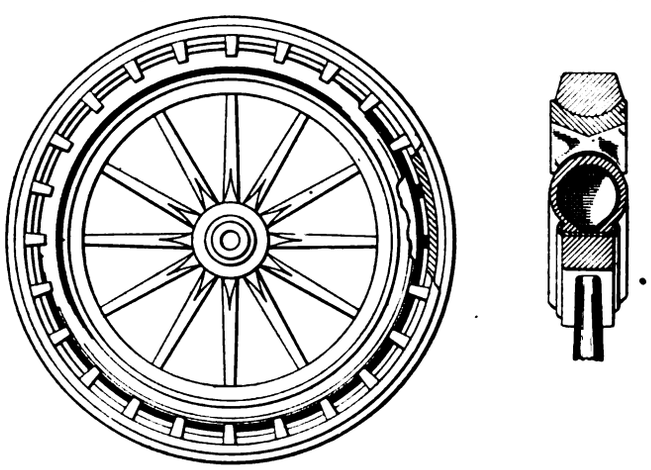


Fig. 8.

erably a solid rubber tire. A plurality of semi-elliptical leaf springs are located between the felly and the rim, and the ends of these springs are curved backward and ride on anti-friction rollers mounted in frames. The sides of each frame project upward alongside of the edges of the curved end of the spring and form guides to hold the end of the spring in proper position. The felly may be made of channel iron, or it may be made solid. U-shaped guides are fastened to the rim midway between each pair of anti-friction rollers and project inwardly and radially to receive the spring and felly.

A movable block is provided with a central opening to receive the spring and is arranged to move longitudinally of the guide, being provided at its corners with ears to prevent displacement from the guide. A cushion or buffer is secured to the bottom of each block to engage the head of the guide if the spring should be forced down so far, and this cushion or buffer can be made of rubber or other material and in any suitable manner. A plurality of rollers are arranged in the channel of the felly to ride on the block. A pair of guide rollers is arranged on each side of the felly to engage the side edges of one of the guides. Thus it will be seen that the felly can move longitudinally on all of the guides and laterally on all of the guides except the one provided with the guide rollers, and this prevents the felly from turning relatively to the rim.

This improved resilient wheel is strong and substantial in construction, and is made without slotting the springs or the felly. The weight on the axle is shifted from one spring to another imperceptibly and the construction and arrangement of parts is such that shocks or jars due to inequalities of the road are entirely absorbed by the springs, thereby greatly reducing the wear and tear on the vehicle. Any number of springs and guides may be employed, as found desirable.

The object of the wheel illustrated in Fig. 8 is to provide a device of this character, which while possessing all the resiliency of the ordinary pneumatic tired wheel, will present a puncture-proof surface to the road bed, and further to supply a supplemental rim which may be readily applied at a very small cost to the vehicle wheels which are already in use and which will render said wheels puncture proof.

The wheel is of the usual and well known construction, and forms no part of the present invention. It is in the supplementary rim and the means for securing it in position upon the wheel that the present invention particularly resides. The supplementary rim carries a solid tire, which is preferably formed of rubber. This supplementary rim has a V-shaped inner periphery. A plurality of saddles have V-shaped bases which engage with the inner periphery of the supplemental rim. These saddles are recessed for the reception of the periphery of the tire, said recessed portions being rounded to prevent the cutting of the tire. The saddles may be formed of wood, rubber or leather, as is found to be best suited. The provision of the rim having a V-shaped inner periphery and of the saddles having V-shaped recesses which engage said rim, provides a structure which prevents the wheel proper from being forced out of the supplementary rim when there is a tendency for the wheel to skid in passing around corners.

In applying this rim, it is but necessary to deflate the tire and to place the outer or supplementary rim and the saddles in position. After this has been done, the inflation of the tire will lock all the parts securely together.

THE LIGHT CAR COMING INTO ITS OWN.

In histories of the automobile industry written from the viewpoint of future decades, the year 1908 will undoubtedly stand forth as one of the most noteworthy periods of transition, says "The Automobile," in a recent editorial. Not that there have been any important inventions or revolutionizing discoveries, which were formerly so freely predicted—far from it. The science of automobile design, as far as its fundamental principles are concerned, is as fixed and definite as any other branch of engineering. But now, for the first time, we have realized and made full use of the immense progress in refinement and detail.

Hitherto the large car has been the one and highest ambition of every automobile manufacturer; no one seemed to regard himself as firmly established in the industry until he could exhibit a model of from 40 to 60 horse-power. The oldest makers, it is true, worked their way up more or less gradually from the small car; later comers built small cars for one year, at most, and then jumped into the large car class.

Some critics have called this movement a mere craze for

Digitized by Google

speed and power. But that is hardly just; these men saw the boundless possibilities of the automobile, and were striving to realize them in the easiest and most obvious way. They wished to build a car which could go anywhere—climb mountains, plow through mud hub-deep, cross trackless deserts—and they succeeded. Their cars have strength, power, and reliability, but they are too expensive, except for buyers who want cars de luxe.

But what was a problem solved itself, as problems often do. While engaged with other and apparently more important questions in large car construction, designers had gradually been improving the efficiency. Every year the same cylinder bore, the same gallon of gasoline, has been made capable of doing us more work. Now, all at once, they have realized that they can build a car of twenty horsepower with all the ability of the earlier forties and sixties. Thus, in the development of the once scorned and neglected light car, has appeared the true solution.

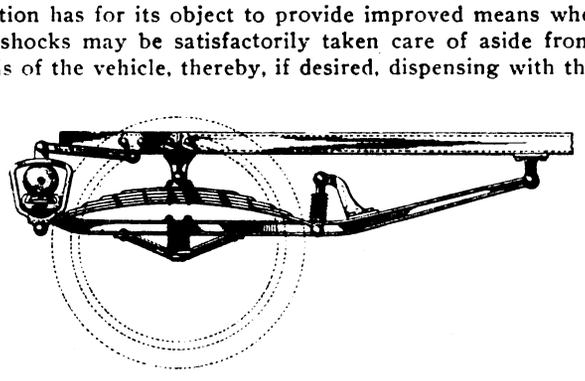
Manufacturers and buyers alike are now beginning to understand that high power, in itself, so far from being an advantage, is in reality a drawback. It is costly, wasteful, and dangerous in the hands of inexperienced or reckless persons. Only the ability which it confers is desirable, and now we can obtain the same ability with half the power and half the expense. Four cylinders of say four inches bore, will carry five persons everywhere they wish to go, quickly, surely, and comfortably, with a bill for gasoline, oil, and tires that is astonishingly low.

These light cars are not merely reduced-size copies of larger models. Their designers have taken full advantage of every improvement in large car construction, and have seized upon several ideas, such as block-cylinder casting and unit construction, which, though of uncertain origin, seemed peculiarly adapted to their ends; but they have also shown remarkable ingenuity and resource in many less noticeable places. Add to this a factory organization and equipment scarcely thought possible a few years ago, and the modern light car appears. Next season it will assume its proper position as a most important class.

ANOTHER DEVICE FOR ABSORBING SHOCK.

Still another scheme for the absorption of shocks is devised by Christopher A. Garvey, of St. Louis, who recently acquired a patent therefor.

This invention relates to means in a vehicle for absorbing the shocks to which the vehicle is subjected during its use and the invention has for its object to provide improved means whereby such shocks may be satisfactorily taken care of aside from the wheels of the vehicle, thereby, if desired, dispensing with the use



of inflated or other cushion tires upon the wheels that are extremely liable to injury while traveling upon roadways.

In the practical use of this shock absorber the force of a blow upon a ground wheel of the vehicle is transmitted from the wheel to the axle mounted therein from said axle to the radial bar and its extension, and the bolster carrier mounted upon a pair of radial arm extensions. This shock is then taken care of by the pneumatic bolster so that it is not forcibly transferred to the body of the vehicle, this being due to the body of the vehicle being supported upon the bolster through the medium of the spring and the saddle connected to said spring and resting upon the bolster.

Wants

HELP WANTED.

Wanted—Foreman for Body Department in large carriage factory in one of the most attractive cities in Canada. Must be up in modern methods and competent mechanic and draughtsman. Address "A. B. C.," care The Hub, 24 Murray St., New York City.

Wanted—Salesman in Vehicle and Implement trade to handle side line of buggy tops, etc. Liberal commission paid. Write at once to Bauer Bros. Mfg. Co., Cincinnati, O.

Wanted—A first-class carriage painter—one who can letter preferred. Must be sober and steady. Or will sell half interest to the right man. Address "J. M. K.," care The Hub, 24 Murray St., New York City.

Wanted—First-class carriage and automobile body draftsman. Must be man capable of drafting limousines, taxicabs and touring car bodies. State wages expected and former experience. Address No. 44, care The Hub, 24 Murray St., New York City.

Wanted—Wholesale carriage company taking up a line of high wheel auto buggies would like to get in touch with experienced man who understands gasoline engines and transmission. Opportunity to invest if desired. State age, salary and reference. Address "W. T. O.," care The Hub, 24 Murray St., New York City.

Wanted—A man thoroughly conversant and acquainted with the carriage and wagon trade in and around Greater New York. Must be capable and experienced. None others will be considered. Give reference and state salary expected. Address Timken Roller Bearing Axle Co., Canton, Ohio.

SITUATIONS WANTED.

Wanted—Situation by Foreman Trimmer with plenty of experience and best references. Address "Y. K.," care The Hub, 24 Murray St., New York City.

Wanted—Position as foreman trimmer, or steady position on high grade carriage and automobile work, by first-class man. Can furnish good references. Address C. L. S., care of The Hub.

Wanted—Position as foreman painter after October first. Prefer best grade work. Young man. Address No. 34, care The Hub, 24 Murray St., New York City.

FOR SALE.

For Sale—Carriage Factory in Kentville, Nova Scotia, the center of the best agricultural district in the Maritime Provinces of Canada. Only factory in Canada east of Quebec. Modern equipment. Buildings and machinery all in good condition. Capacity 2500 vehicles annually. Good shipping facilities and good market for output. Full particulars and description of plant on application. The Nova Scotia Carriage Co. Ltd., Kentville, Nova Scotia.

For Sale—Rare Opportunity. Carriage factory for sale in hustling Indiana city. Established forty-five years. 80 x 80 two story brick building, and large vacant lot in rear. Will sell plant complete as a going plant, or will sell reality separately. Address "W. W. F.," care of The Hub, 24 Murray St., New York City.

For Sale—To settle an estate, one of the finest carriage plants in the country can be purchased at advantageous prices and liberal terms. Located in heart of a very substantial Western city. Good will second to none on heavy and light carriages and custom automobile body work. This is a going concern and will continue to be operated, but as the principals are women this rare opportunity arises. Factory about 90 x 113 feet, five stories and full sized basement Brick and stone construction. Nothing finer of its kind in United States, and complete in every department. Plant, machinery, merchandise and good will; or will sell machinery, merchandise, good will, and lease the factory on favorable rental. Greatest bargain ever offered to the carriage public. In operation over fifty years, and will continue whether sold or not. In great manufacturing city of about 50,000 population.

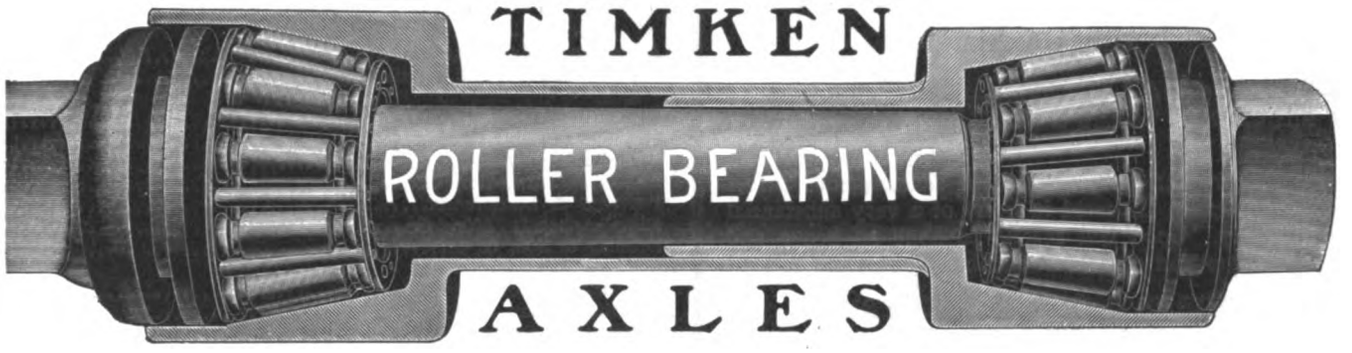
For prices and terms, address "Carriage Opportunity," care The Hub, 24 Murray St., New York City.

For Sale—Moyer hub bore, his latest pattern. Used but little. Will sell at a sacrifice. For full particulars and price, address C. V. Taylor, Pontiac, Mich.

PATENTS.

Patents—H. W. T. Jenner, patent attorney and mechanical expert, 607 F. Street, Washington, D. C. Established 1883. I make an examination free of charge and report if a patent can be had, and exactly how much it will cost. Send for circular.

Digitized by Google



The Greatest Problem

in hauling is how to haul the greatest load with the least trouble and expense

The Timken Roller Bearing Axle Co., Chicago, Ill.
Canton, O.

Gentlemen:—Replying to your inquiry concerning the roller bearings furnished for our wagons, state we now have them in fifteen wagons in use in Minneapolis, St. Louis, Chicago, etc., and are fully satisfied of the utility and benefit coming from their use. We cheerfully recommend them to people in teaming lines on account of saving, less annoyance in the way of oiling, etc.

Yours respectfully,

THE RUMFORD CO.,
F. J. Selden, Mgr.,
Dealers in the productions of the
RUMFORD CHEMICAL WORKS.

S\O

The above is one of the number of letters sent us, which offer the most conclusive proof possible that

Timken Roller Bearing Axles

are a perfect solution of the haulage problem.

Every manufacturer, dealer and owner of a vehicle should know about **TIMKEN BEARINGS**---what they save and how they save it.
Interesting literature on request.

The Timken Roller Bearing Axle Co.

CANTON, OHIO

BRANCHES: 10 East 31st Street, New York; 429 Wabash Avenue, Chicago

Digitized by Google

To Settle an Estate

ONE OF THE

Finest Carriage Plants

in the country can be purchased at advantageous prices and liberal terms. Located in heart of a very substantial Western city. Good will second to none on heavy and light carriages and custom automobile body work.

THIS IS A GOING CONCERN

and will continue to be operated, but as the principals are women this rare opportunity arises. Factory about 90 x 113 feet, five stories and full sized basement. Brick and stone construction. Nothing finer of its kind in United States, and complete in every department. Plant,machin-States, and complete in every department. Plant, machin-merchandise, good will and lease the factory on favorable rental.

GREATEST BARGAIN EVER OFFERED

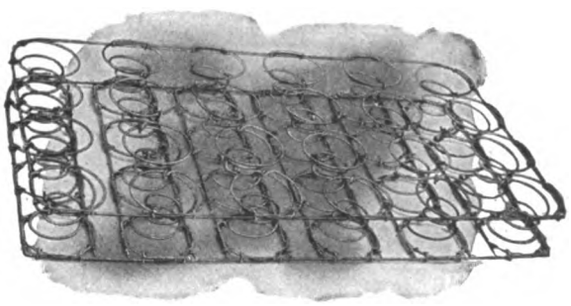
to the carriage public. In operation over fifty years, and will continue whether sold or not. In great manufacturing city of about 50,000 population.

For prices and terms, address

CARRIAGE OPPORTUNITY,

Care The Hub, 24 Murray St., New York City.

Our Carriage or Spring Edge Cushion Frame



Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.

NATIONAL SPRING and WIRE CO., ALBION, MICH., and ST. CATHARINES, ONT., CAN.

For Weak or Overloaded Springs.

VICTOR STEEL SPRING BUFFERS

Save wagon, prevent breakdowns, and add materially to the carrying capacity. If your dealer does not have them write to us direct.



Made in Four Sizes: 0, 1 1-4 in. spring & under; 1, 1-4 in. to 1 1-2 in. spring; 2, 1 1-2 in. to 2 in. spring; 3, 2 in. to 2 in. spring.

Carrying capacity of each spring: No. 0, 400 lbs.; 1, 750 lbs.; 2, 1000 lbs.; 3, 1250 lbs.

Manuf'd by INDIANAPOLIS BOLSTER SPRING CO.

INDIANAPOLIS. INDIANA.

INDEX TO ADVERTISERS.

American Roller Bearing Fifth Wheel Co..... 18
Auxiliary Spring and Ventilating Button Co..... 5

Barnes & Co., W. F. & John..... 18
Beaudett Co., O. J..... 18
Beckwith & Chandler Co..... 2
Bentel & Margedant Co..... 6
Bertram & Lamoreaux..... 24
Bimel-Ashcroft Mfg. Co..... —
Bradley & Son, C. C..... 23

Carriage Opportunity..... 14
Central Bureau of Engraving..... 16
Columbus Bolt Works.....4th cover
Consolidated Rubber Tire Co..... 2
Cooper Co., J. A. & D. P..... 1
Crane & MacMahon..... 2d cover

Dalzell Axle Co..... 21
Defiance Machine Works..... 17
Devoe, F. W., & Raynolds Co., C. T.....3d cover

Eagle White Lead Co..... 6
Eccles Co., Richard..... 19
English & Mersick Co., The..... 3

Fitch Gear Co..... 22
Flexible Shaft and Tool Co..... 6
Franz Body Mfg. Co..... —

Gerhab, Jacob 22
Gifford & Son, John A..... 23
Goodrich Co., B. F., The..... 5
Goodyear Tire and Rubber Co..... 7

Hankinson, J. V..... 18
Harland & Son, Wm..... 1
Hoopes Bro. & Darlington, Inc.....2d cover

Indianapolis Bolster Spring Co..... 14

Johnston Paint Co., R. F..... 4
Jones & Co., Phineas..... 15

Keystone Forging Co..... 21
Kokomo Rubber Co.....4th cover

Landsman Motor Co..... 16
Landers Bros. Co..... 15

Masury & Son, John W..... 2
Maxwell & Fitch Co..... —
McKinnon Dash Co.....4th cover
Miller Bros. 23

National Safety Fifth Wheel Co..... 15
National Spring and Wire Co..... 14
Nobles & Hoare..... —

Ohio Seat Co..... 23

Pomeroy & Fischer..... —
Porter, H. K..... 23

Russell, Burdsall & Ward Bolt and Nut Co..... 22

Sheldon Axle Co..... 21
Smith & Co., Edw..... 1
Spring Perch Co..... 21
Standard Ball Axle Co..... 15
Standard Oil Cloth Co..... 17
Stein Double Cushion Tire Co..... 24

Timken Roller Bearing Axle Co..... 13
Tucker Wood Work Co..... 18

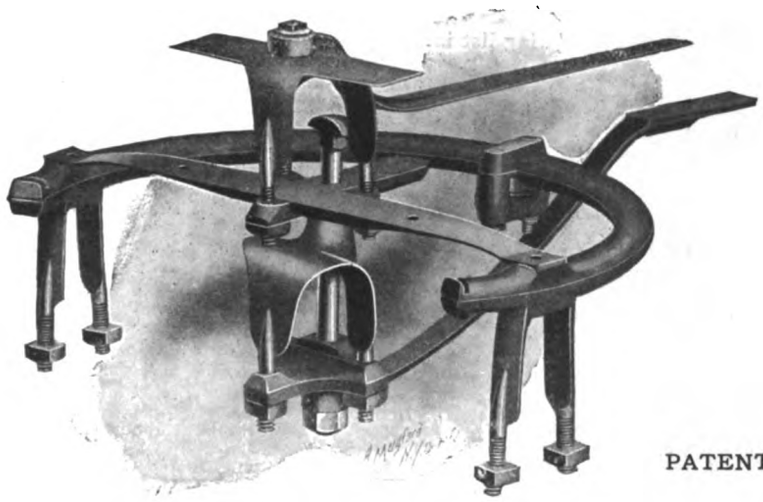
Union City Wheel Co.....3d cover

Valentine & Company..... 4

West Tire Setter Co.....3d cover
Wiese & Co., Wm..... 23
White, H. F..... 2
Wilcox Mfg. Co., D..... 15
Willey Co., C. A.....2d cover
Woodman, Joel H..... 15

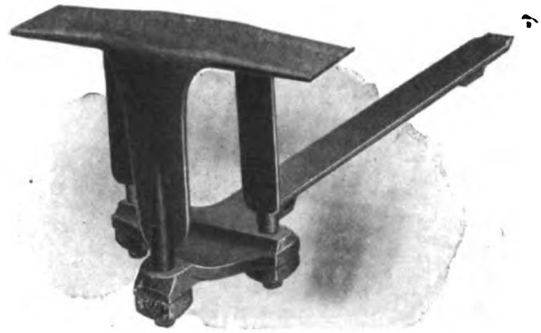
Please mention "The Hub" when you write.

Digitized by Google



No. 1902. Single Reach.

PATENTED.



No. 35½ and 41¾. Perch Heel.

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MFG. CO.

MEHANICSBURG, PA.

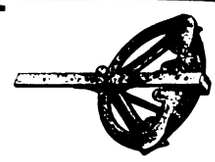
IT DOES THE TRICK R. F. D. SPECIAL



This axle runs easier than any other, and requires no attention. IT'S A WONDER Ask why. We can prove it.

STANDARD BALL AXLE WORKS, Lancaster, Pa.

National Safety Short-Turning Fifth Wheels
Are Giving Universal Satisfaction.
Ask Your Dealer for Them.
National Safety Fifth Wheel Co., Lancaster, Pa.

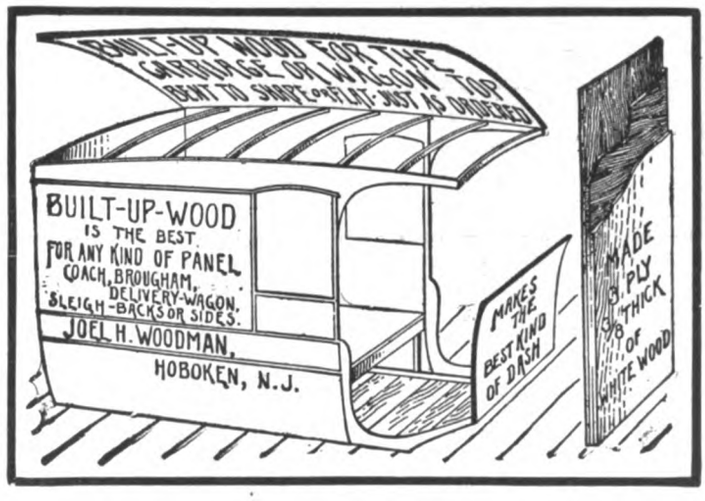


Style C.

Jones Wheels
BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.



LOWEST PRICES. *PROMPT SHIPMENTS.* *SUPERIOR QUALITY.*

TOLEDO **LANDERS BROTHERS CO.** **BOSTON**

We Are the Pioneers in the

SHEETINGS WEBBING — 32 Grades Single Double Three-Ply — **BUCKRAM LINE** — Four-Ply and Canvas Lined — DUCKS WADDING

Celluloid Sheets, Enameled Muslins, Drills and Ducks

SCRIM. *RATTAN MOULDING.* *BATTS.* *OILED DUCK.* *OIL CARPET.*

Please mention "The Hub" when you write.

Digitized by Google

HOTEL CUMBERLAND

NEW YORK

Southwest Cor. Broadway at Fifty-fourth St.

Near 50th St. Subway and 53d St. Elevated Stations and accessible to all surface lines.



Headquarters for Carriage and Automobile Trade

Ideal Location, Near Theatres, Shops and Central Park.

NEW AND FIREPROOF

STRICTLY FIRST-CLASS IN EVERY RESPECT

All Outside Rooms. No Carpets. All Hardwood Floors and Oriental Rugs.

European Plan.

Transient Rates, **$2.50** with Bath, and up.

Restaurant Unexcelled. Prices Reasonable.

SEND FOR BOOKLET.

HARRY P. STIMSON, *Formerly with Hotel Imperial.*

R. J. BINGHAM, *Formerly with Hotel Woodward.*

Build Your Own Auto

A GASOLINE ENGINE TO FIT ANY BUGGY or WAGON

LANDSMAN MOTOR CO.

908 Hickory St. ST. LOUIS, MO.

Write for Catalogue.

MANUFACTURERS

DESIRING FIRST-CLASS ILLUSTRATIONS OF THEIR PRODUCT, AT REASONABLE PRICES, SHOULD PERMIT US TO SUBMIT AN ESTIMATE.

Central Bureau of Engraving

COMMERCIAL ENGRAVERS

157-159 WILLIAM STREET, NEW YORK

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

Axles, Etc.

Dalzell Axle Co., South Egremont, Mass.
Sheldon Axle Co., Wilkes-Barre, Pa.
Standard Ball Bearing Axle Co., Lancaster, Pa.
Timken Roller Bearing Axle Co., Canton, Ohio.

Bodies, Seats, Etc.

Beaudett Co., O. J., Pontiac, Mich.
Franz Body Mfg. Co., Akron, O.
Woodman, Joel H., Hoboken, New Jersy.

Bodies in the White.

Miller Bros., Amesbury, Mass.

Bolts and Nuts.

Columbus Bolt Works, Columbus, Ohio.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

Carriage Cloths.

Wiese & Co., Wm., New York City.

Carriage Forgings.

Cortland Forging Co., Cortland, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

Carriage Hardware.

Gifford & Son, John A., New York.

Carriage Goods.

English & Mersick Co., New Haven, Conn.
Gifford & Son, John A., New York.
Wiese & Co., Wm., New York.

Dashes, Fenders, Rails, Etc.

McKinnon Dash Co., Buffalo, N. Y.

Engraving.

Central Bureau of Engraving, New York City.

Fifth Wheels.

American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
National Safety Fifth Wheel Co., Lancaster, Pa.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

Jacks.

Hankinson, J. V., Franklin, O.

Lamps.

Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

Machinery and Tools.

Barnes Co., W. F. & John, Rockford, Ill.
Bentel & Margedant Co., Hamilton, Ohio.
Defiance Machine Works, Defiance, Ohio.
Maxwell & Fitch Co., The, Rome, N. Y.
Porter, H. K., Everett, Mass.
Strelinger Marine Engine Co., Detroit, Mich.
West Tire Setter Co., Rochester, N. Y.

Miscellaneous.

Bertram & Lamoreoux, Detroit, Mich.
Landers Bros. Co., Toledo, O., and Boston, Mass.
Standard Oil Cloth Co., New York.

Rubber Tires.

Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, O.
Goodyear Tire and Rubber Co., Akron, O.
Kokomo Rubber Co., Kokomo, Ind.
Stein Double Cushion Tire Co., Akron, O.

Shaft Couplings and Anti-Rattlers.

Bradley & Son, C. C., Syracuse, N. Y.
Eccles Co., Richard, Auburn, N. Y.

Spokes.

Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.

Springs and Gears.

Auxiliary Spring and Ventilating Button Co., Detroit, Mich.
Cooper, J. A. & D. P., Struthers, O.
Fitch Gear Co., Rome, N. Y.
Indianapolis Bolster Spring Co., Indianapolis, Ind.
National Spring and Wire Co., Albion, Mich.
Spring Perch Co., Bridgeport, Conn.

Trimming Materials.

Stevens & Sackett Co., New Haven, Conn.

Varnishes, Paints and Japans.

Beckwith-Chandler Co., Newark, N. J.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Harland & Son, Wm., London and New York.
Johnston Paint Co., R. F., Cincinnati, O.
Masury & Son, John W., New York and Chicago.
Nobles & Hoare, London, Eng.
Pierce Co., F. O., N. Y. City.
Pomeroy & Fischer, N. Y. City.
Smith & Co., Edw., N. Y. City.
Valentine & Co., New York, Chicago, Boston, Paris.
Willey Co., C. A., Hunter's Point, New York City.

White Lead.

Eagle White Lead Co., Cincinnati, Ohio.

Wheels.

Crane & MacMahon, New York.
Union City Wheel Co., Union City, Ind.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.

Wheel Stock, Bent Wood, Etc.

Crane & MacMahon, New York.
Tucker Wood Work Co., Sidney, Ohio.

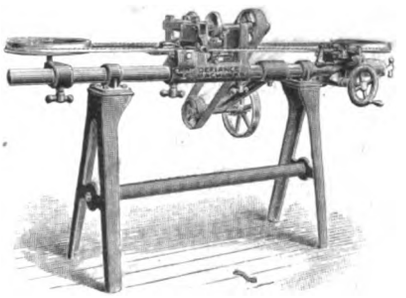
Digitized by Google

"DEFIANCE"
WOOD-WORKING MACHINERY

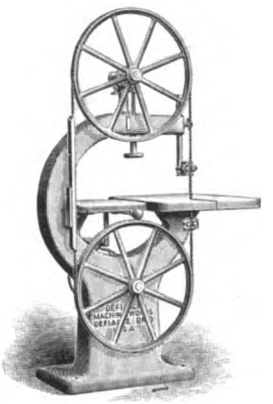
Invented and Built by

The Defiance Machine Works

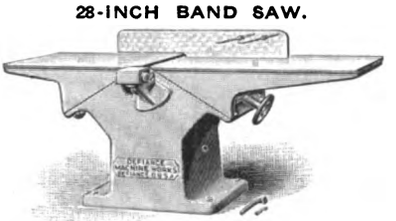
Defiance, Ohio



BAND SAW SETTER AND FILER.



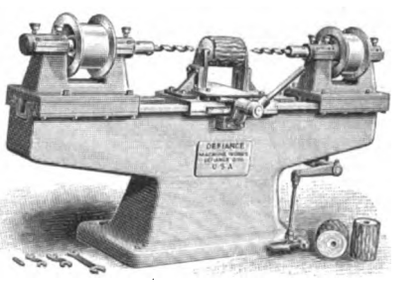
28-INCH BAND SAW.



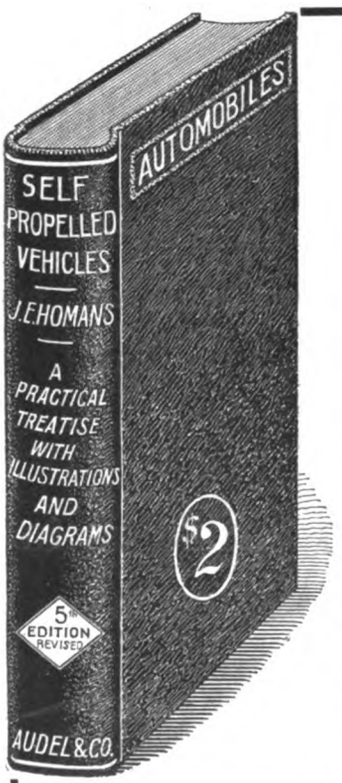
24-INCH HAND PLANER.

For Making

Hubs, Spokes, Wheels, Wagons, Carriages, Rims, Shafts, Poles, Neckyokes, Singletrees, Hoops, Handles of all Kinds, Insulator Pins, Bobbins, Spools, Table Legs, Oval Wood Dishes and for General Wood Work.



AUTOMATIC HUB BLOCK BORER.



"Self-Propelled Vehicles"

Fifth Edition, Revised.

A practical treatise on the theory, construction, operation, care and management of all kinds of Automobiles.

By

JAMES E. HOMANS, A.M.

Contains 608 pages and upwards of 500 illustrations and diagrams, giving the essential details of construction and many important points on the successful operation of the various types of motor carriages driven by steam, gasoline and electricity.

This work is now the accepted standard, explaining the principles of construction and operation in a clear and helpful way. This book will be sent postpaid to any address in the United States, Mexico or Canada upon receipt of $2.00.

Address

TRADE NEWS PUBLISHING COMPANY

24 Murray Street, New York

MERITAS

CARRIAGE ENAMELED **OIL CLOTH**



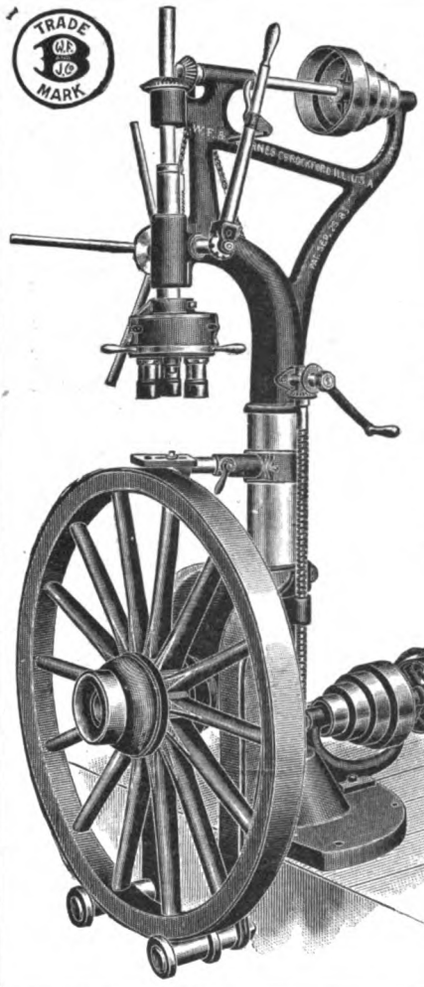
MERITAS isn't simply "oil cloth." It's a step higher than the best of ordinary kinds—beautiful, strong, and wear and tear-proof. Guaranteed not to peel or crack.

Standard Oil Cloth Co.

320 Broadway, NEW YORK.

Please mention "The Hub" when you write.

Digitized by Google



A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam'
Any width of tire up to 6 in' wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

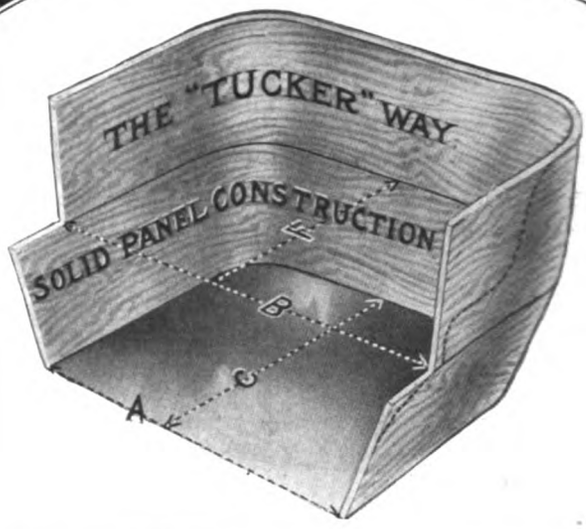
Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

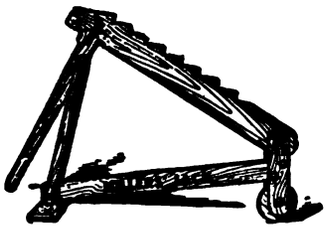
588 Ruby Street
ROCKFORD, ILL.

SOLID BENDINGS



MAKE FAULTLESS SEATS

CATALOG "H" SHOWS SIZES
WRITE FOR IT
THE TUCKER WOODWORK CO. SIDNEY, OHIO.



Made in four sizes, Nos. ¾, 1, 2, and 3.

JACKS FOR BUGGIES AND WAGONS

Miller Patent Wagon Jack Made by

J. V. HANKINSON,

Successor to THOS. MILLER,
FRANKLIN, OHIO.

Write for particulars and prices.

Automobile Manufacturers

Write us for prices on Limousine, Touring Car or Runabout Bodies before placing contracts for your requirements.

Our Facilities enable us to handle any size order

GOOD WORK AND RIGHT PRICES.

O. J. BEAUDETT CO.

Pontiac, Michigan

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.
745 THIRD AVE., BROOKLYN, N. Y.

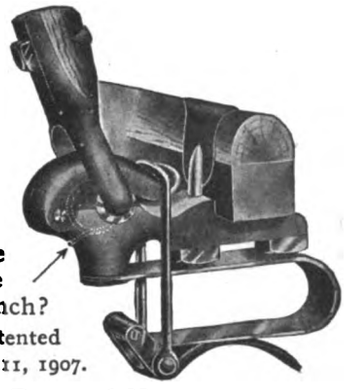
Digitized by Google

ECCLES BALL-BEARING COUPLINGS

The cut shows our coupling bolted to axle, and the form our flat leather bushing takes when the shafts are placed and locked in the coupling. The leather can be securely fastened in by the user, by driving a soft wire nail through the small hole we drill, which clinches it.

When the shafts are removed, the bushing does not come out, but stays in the Coupling where it belongs. NO LOST BUSHINGS WHEN YOU USE OUR COUPLINGS.

We would like to send you our circular and have you try our Couplings. They will save you money.



Patented June 11, 1907.

Patented Nov. 25, 1902.

The spring is pivoted at the front so that it can be turned forward out of the way of the wrench while clipping the Coupling to the axle.

These are two of the good points, but there are plenty more desirable features in our Couplings.

We also have a Catalogue showing our full line of CARRIAGE and WAGON FORGINGS, all of which we make

RICHARD ECCLES COMPANY, AUBURN, N. Y.

American Harness and Saddlery Directory

FOR 1908 IS NOW ON SALE

It is the most accurate and complete edition that has been published

Trade News Publishing Company

24-26 Murray St., New York

THE list of the **WHOLESALE** and **JOBBING TRADE** is so arranged as to make it convenient to separate the association members from those not so recognized.

The **RETAIL HARNESS MAKERS** of the United States and Canada comprise the principal part of the Directory, arranged by State, Town and County, and in the large cities, the street and number is given. Those rating (approximately) over $1,000 are marked.

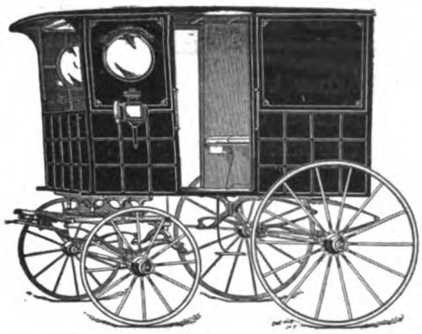
A list of **HARNESS DEALERS** as distinguished from retail harness manufacturers, is also given. The value of this list to those who solicit the vehicle, implement, hardware and department stores will be readily appreciated.

THE BUYER'S GUIDE is a valuable as well as unique feature. It contains an alphabetical classification of all the many and various articles made to sell to the trade, and the names of those making the various articles.

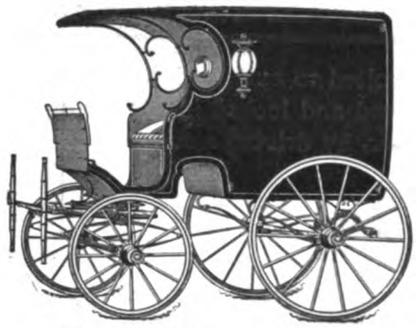
A list is also published of Export Commission Merchants, giving the class of merchandise they handle.

THE PRICE OF THE DIRECTORY IS $4.00, PAYABLE IN ADVANCE.

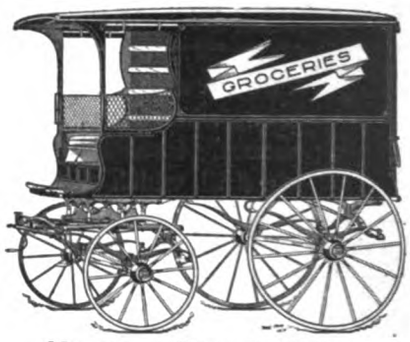
Digitized by Google



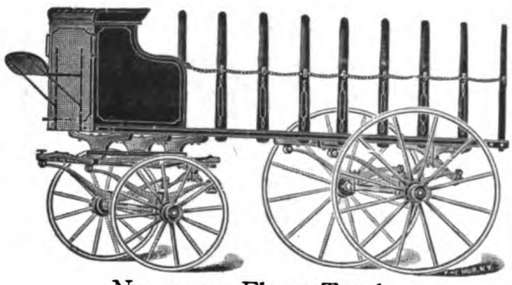
No. 112.—Milk Wagon.



No. 111.—Altman Wagon.



No. 113.—Grocery Wagon.



No. 122.—Flour Truck.

Electrotypes

of the vehicles presented on this page will be forwarded on receipt of

75 cts.

for each cut, to any address. Postage prepaid.

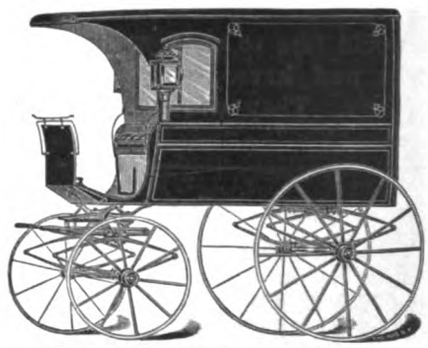
Catalogue

containing nearly 200 illustrations of carriages, wagons, sleighs, and miscellaneous cuts will be sent upon application.

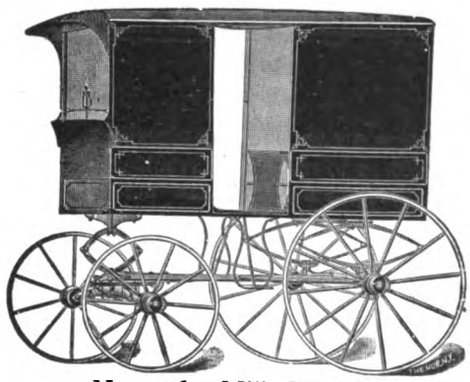
Trade News Publishing Co.

24-26 MURRAY ST.

NEW YORK



No. 115.—Delivery Wagon.



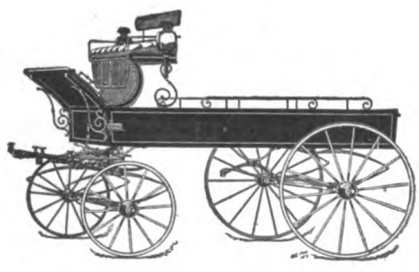
No. 116.—Milk Wagon.



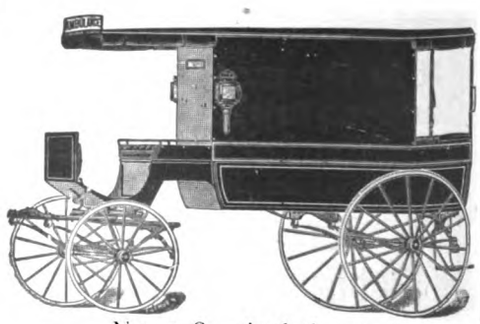
No. 117.—Merchandise Truck.



No. 114.—Delivery Wagon.



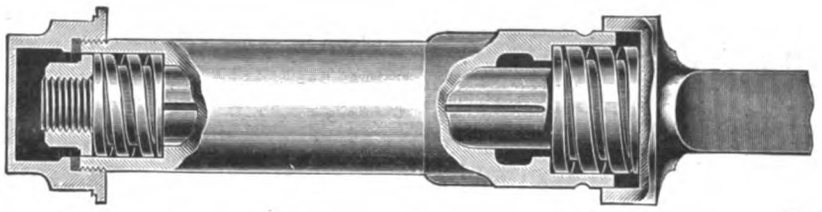
No. 124.—Delivery Wagon.



No. 118.—Ambulance.

Digitized by Google

PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

DALZELL AXLE CO., South Egremont, Mass.

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.



PATENTED DEC. 3, 1901

THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland Pa.

Results always follow advertising in THE HUB

It Pays Others

It Should Pay You

Axles

A complete line of Wagon and Carriage Axles—Common, Concord, Farm Wagon, Half Patent, Long Distance, Collinge and Mail Patent. Empire Ball Bearing Axles. Made only by

SHELDON AXLE COMPANY, Wilkes-Barre, Pa.

The Best and Easiest Riding Springs, for both Light and Heavy Vehicles. We have had very great success with our Automobile Springs : : : : : :

Springs

Please mention "The Hub" when you write.

Digitized by Google



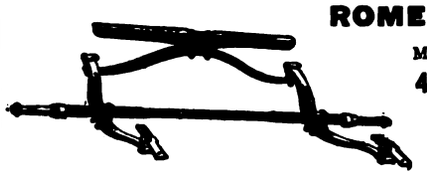
BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.

FITCH GEAR CO.

ROME, N. Y., U. S. A.



Manufacturers of over

40 STYLES of GEARS

From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.

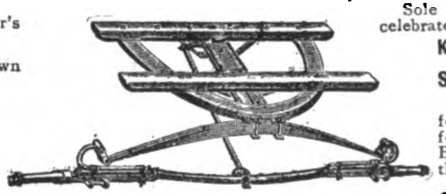
Sole Manufacturers of the celebrated

Kramer Lowdown Short Turn Gear

It is the Finest Gear for Drop Centre-Body for Milk, Bakers' or Butchers' Wagons on the market.

Send for our No. 22 Catalogue, just out.

Kramer's Patent Lowdown Gear.



C.H.A.T.

Helps Secure Situations.

Carriage, Harness and Accessory Traveling Salesmen's Association

OF THE UNITED STATES.

All Commercial Travelers in Above Lines Eligible. No Others. Pays Death Benefits.

Membership Fee, - - - $3.00

Annual Dues, - - - - 1.00

Employers of Traveling Men eligible to join as associate members on payment of $5.00, and are exempt from all further dues.

Manufacturers of carriages, harness or goods that enter into their construction, jobbers of same, can secure good, reliable and efficient salesmen through our Association, as the members of this Association have the best facilities for knowing all about men who are seeking situations, and none will be recommended unless they are first class and worthy of support.

Salesmen in need of a situation, or manufacturers in need of a salesman, address for further information,

L. H. KRONFELD, Secretary.

Box 57, Mount Vernon, N. Y.

HOTEL WESTMINSTER

Irving Place and 16th Street

NEW YORK CITY.



One block from **Union Square,** Surface, Elevated and Subway Cars. Midway between leading **Wholesale** and **Retail Stores** and **Theatres,** and yet far enough from Broadway to insure **Comfort** and **Freedom** from the noise and bustle of that thoroughfare.

Perfectly Quiet Locality and **Home-like** in every respect.

EXCELLENT CUISINE, EUROPEAN PLAN.

Single Rooms, $1.00 per day and up. Room with Bath, $2.00 per day and up. Parlor, Bedroom and Bath, $3.00 per day and up.

SEND FOR BOOKLET.

O. H. FOSTER, Proprietor.

Headquarters for "The H. D. Smith & Co.'s" Carriage and Wagon Forgings

JACOB GERHAB

DEALER IN

Carriage Cloths, Leathers and Trimmings, Wagon and Cart Material

Salable prices and all information cheerfully furnished

158, 160, 162 and 164 North Third Street

PHILADELPHIA, PA.

Digitized by Google

THE BRADLEY SHAFT COUPLING



OPEN

Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME !

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1½ in. in section.

C. C. BRADLEY & SON, Syracuse, N. Y.



CLOSED

JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

MILLER BROTHERS

Builders of

CARRIAGES

IN THE WHITE

AND

Automobile Bodies

AMESBURY, MASS.

THE OHIO SEAT CO.

Manufactures PANEL SEATS

STICK SEATS of every description.

Also Canopy Frames, Cushion Frames and Buggy High Backs. Up-to-date Equipment. Write for Quotations.

1964-1966 CENTRAL AVE., CINCINNATI, O.

BOLT CLIPPERS
PORTER PORTER PORTER
EVERETT, MASS. U.S.A.

WM. WIESE
With Hardt, Von Bernuth & Co.
Since 1883.

WM. WIESE & CO.

ALBERT MAERTENS
With Hardt, Von Bernuth & Co.
Since 1894.

Formerly Carriage Goods Department of HARDT, VON BERNUTH & CO.

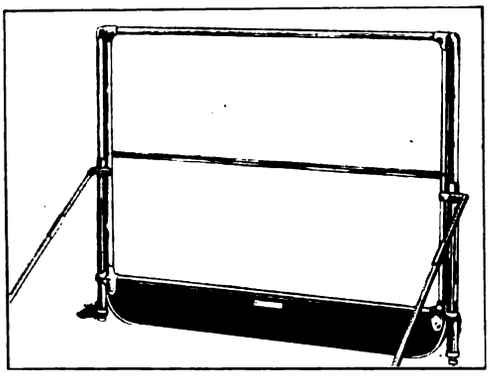
Carriage and Automobile Linings and Livery Cloths

Sole Agents in the United States for
WULFING'S CARRIAGE CLOTH AND EL DE BARAN GOATSKIN.

66-68 Greene St., New York

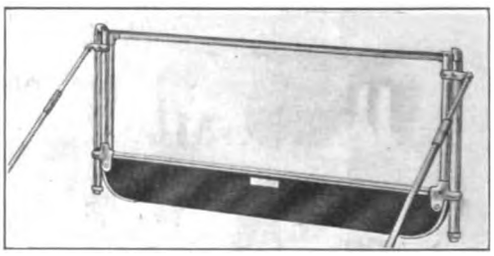
Digitized by Google

WILL NOT RATTLE—TELESCOPE WIND SHIELD





Try one and be convinced. Get a Wind Shield that is all we claim for it — absolutely the best on the market; one for which you need never make an apology; one that is not only a Wind Shield but an improvement to any car.

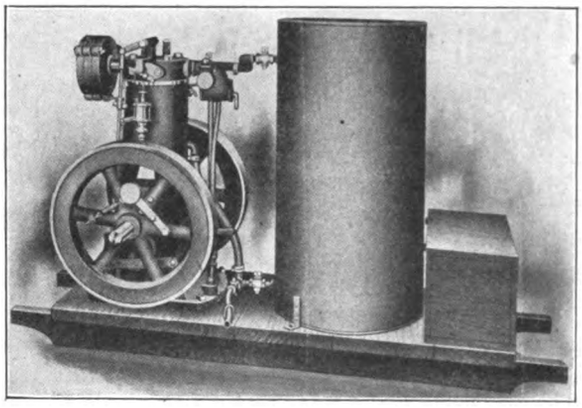




BURTRAM & LAMOREAUX,

72 Fort Street East, Detroit, Mich.

"THE STRELINGER"



Let This Motor Run Your Shop—Only One Cent an Hour per H. P.

You start it in the morning and it will run 'till night without any attention. Stop and start at your pleasure. Your power is always ready. Strong and steady. This motor will be a source of comfort and satisfaction to you. Send for catalog, and learn more about our STRELINGER ENGINES. One to fifty horse-power.

THE STRELINGER MARINE ENGINE CO.

Dept. Hub, 46 Congress St. E., Detroit, Mich.

NEW YORK CITY

THE HERMITAGE

A CLUB HOTEL FOR MEN

The name tells the story.

Seventh Ave. and Forty-second St.

Junction of Broadway.



Restaurant on the street floor —a restaurant where ladies are welcome.

Every other part of the house exclusively for men.

Telephones in every room.

Respectful, quiet, obedient and alert Japanese servants.

Bedroom and bath **$2.00** a day upward.

Send for Booklet.

T. F. PADDELL, Proprietor

Journal for the Carriage and Automobile Trade

The Hub

Published Monthly at Two Dollars per Year

Kansas City's Most Popular Hotel



THE COATES HOUSE

Surface street cars from Union Depot direct to hotel.

Headquarters for Western Retail Implement Dealers' Association, Southwestern Lumberdealers' Association, Hereford Breeders' Association, Visiting Stockmen.

MODERATE RATES

Inter-State Hotel Co., Pr.

Also Lexington Hotel, Chicago

Please mention "The Hub" when you write.

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES } **C. T. RAYNOLDS & CO'S** { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES }

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

WHEELS

No Matter Where

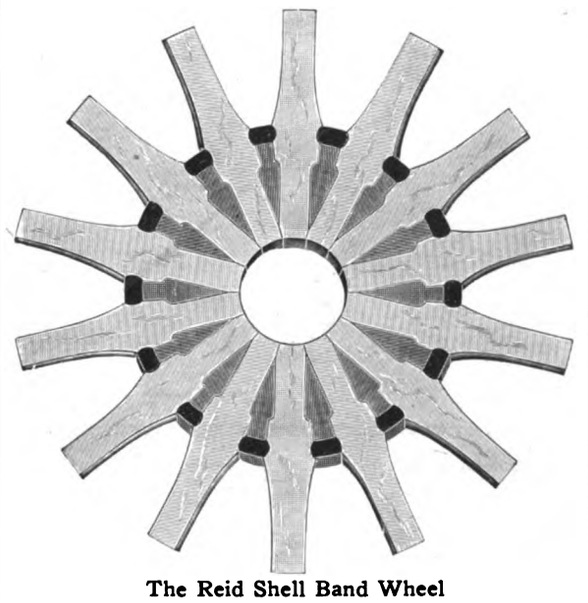
YOU HAVE BEEN BUYING

WHEELS

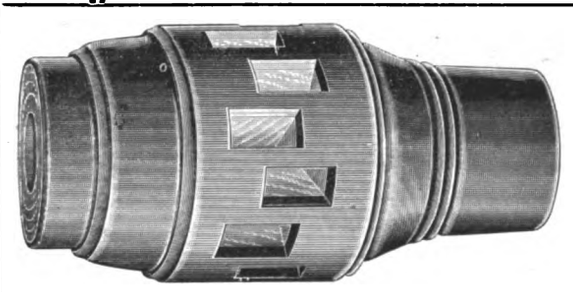
IT WILL PAY YOU TO CONSULT US

Our Prices Just a Little Lower Than Those of Anybody Else

Write Before Placing the Next Order



The Reid Shell Band Wheel

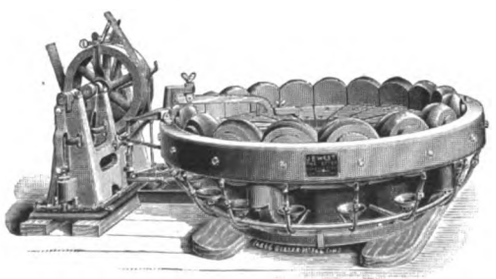


Union City Wheel Co.

UNION CITY, INDIANA

Strong—Neat—Durable

THE FIRST TIRE SETTER



you ever heard of was a **"WEST"**—probably, for they were on the market several years before any other and you are hearing more about them every year. Many of the older users are loudest in their praise. That's because they stand the test of time—they're made that way. Some of our Hydraulic machines have been **in use fourteen years** and are doing as good work now as when first installed. **Now,** we don't claim our machines are best simply because they have been longest on the market, **but because** we have been making a study of cold tire setting all these years and improving our machines as experience and observation taught us, and when you buy a **"West Hydraulic"** you get the benefit of this experience. Some people knowing **our** machines would set tires cold satisfactorily, thought some other would do as well—and the price was cheap—also machine. Now they wish they had bought a **"West Hydraulic." If you make a similar mistake it's your own fault.**

Buy a **"West Hydraulic"** and be happy. Hand or Power machines.

THE WEST TIRE SETTER COMPANY, Rochester, N. Y.

Digitized by Google



THE GREATEST IMPROVEMENT

You can make in your work for next season is to use our dash rails

WELDED SOLID TO DASH FRAME

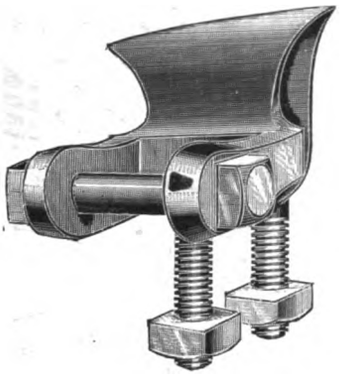
Protects Edge of Dash—Will Not Come Loose

McKinnon Dash Company

Cincinnati, Ohio
Troy, Ohio

Buffalo, N. Y.

St. Catharines
Ontario



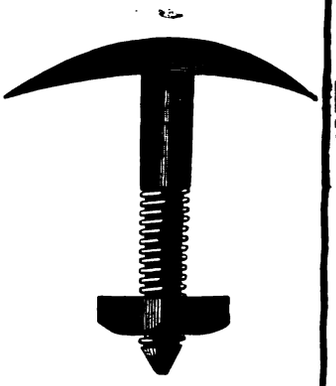
Skewed Shaft Couplings

Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips 5/8 or 3/4 width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

1908 Catalog "H" on application.

COLUMBUS BOLT WORKS, Columbus, O.



Kokomo Solid Rubber Tires

¶ In rubber substance the Kokomo Solid Rubber Vehicle Tire is truly **SOLID.**

¶ Solid with the pure stock that has made them an exception to the ordinary tires of commerce.

¶ In Kokomo quality there is an established standard that is recognized as the highest ideal of tire construction. The Kokomo is a standard tire in every respect.

¶ Kokomo Tires always score in the running, and the longer the test the more convincing the results.

Kokomo Rubber Company

Kokomo, Indiana, U. S. A.

Digitized by Google

The Hub



Golden Anniversary and Convention Number



Oldest Carriage Journal in the World

1858 1908

Vol. L. No. 7 OCTOBER, 1908

Digitized by Google

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

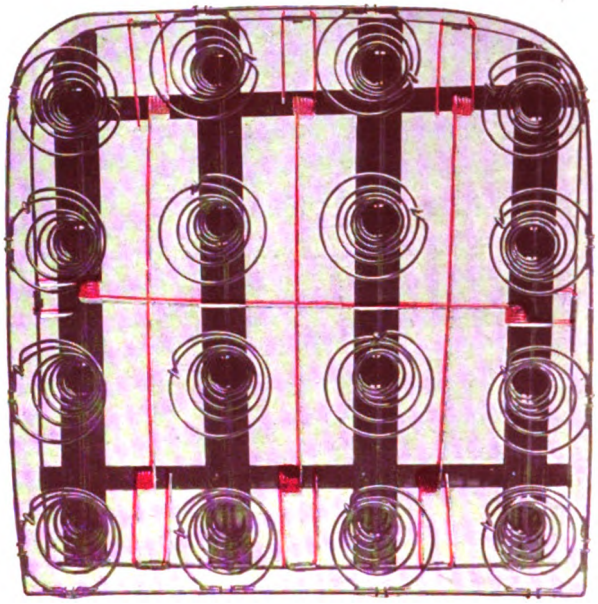
SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

ROYAL ARCH AUXILIARY SPRINGS



Soft Face Construction. Patented.

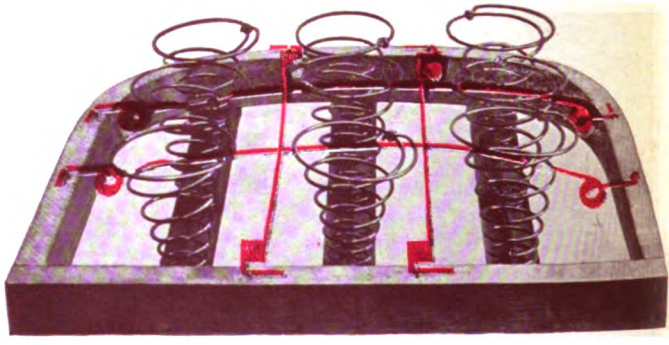
Auxiliary Spring & Ventilating Button Co.

DETROIT, MICH.

ROYAL ARCH AUXILIARY SPRINGS prevent the complete depression of the coiled springs, relieve the coils of the severe shocks, and greatly lengthen the life of the cushion. A cushion with Royal Arch Springs will never sag, and

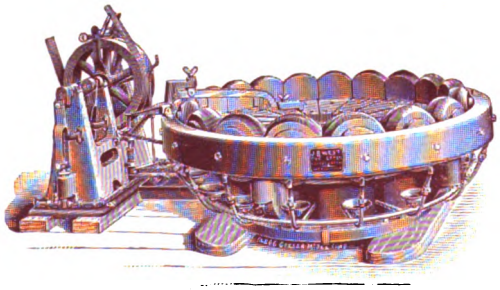
FORTIFIES THE RIDER AGAINST THAT SUDDEN UNEXPECTED JAR

Will cost no more than the common construction. Why? Write us.



Wood Frame Construction. Patented.

THE FIRST TIRE SETTER

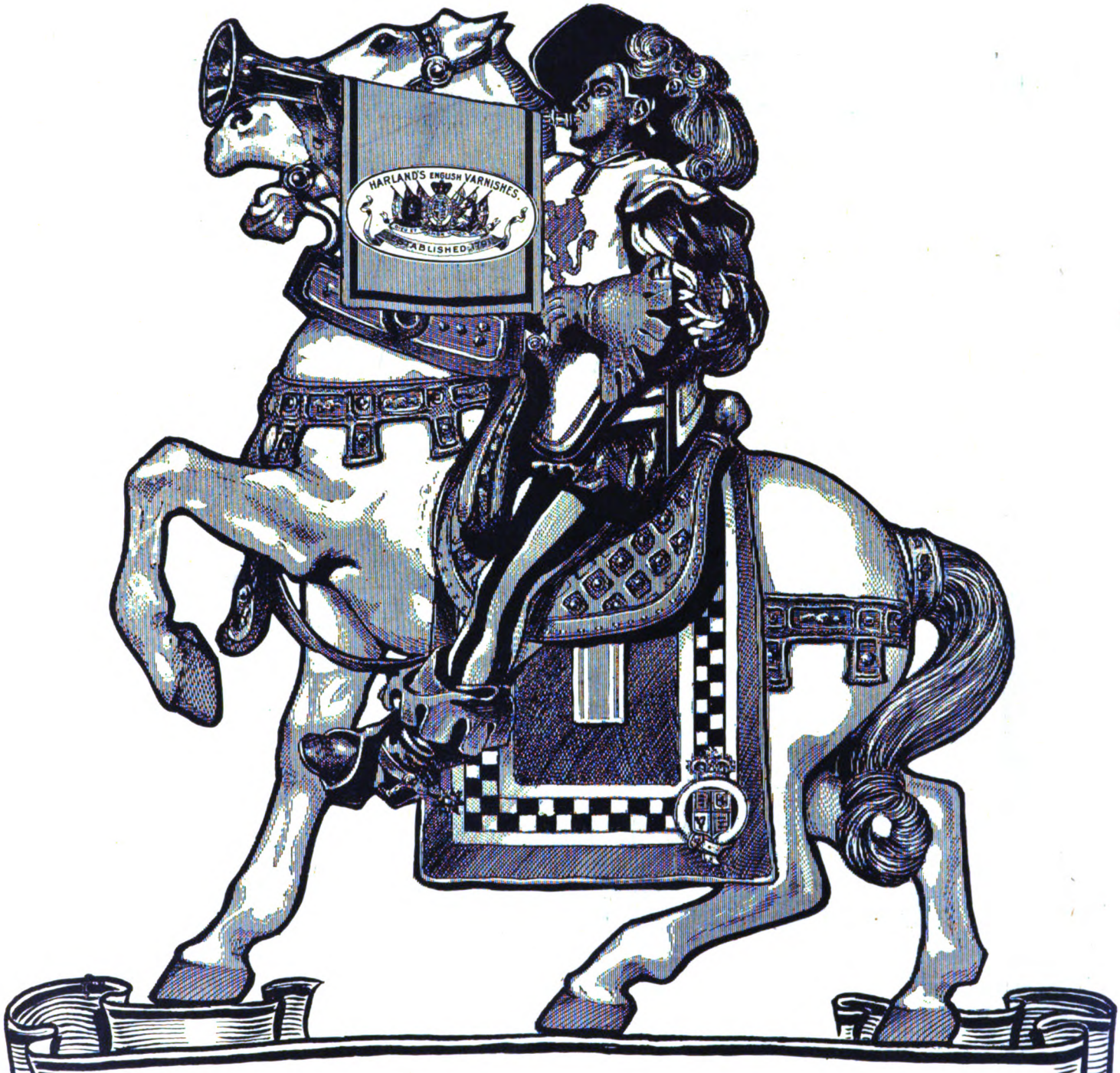


you ever heard of was a **"WEST"**—probably, for they were on the market several years before any other and you are hearing more about them every year. Many of the older users are loudest in their praise. That's because they stand the test of time—they're made that way. Some of our Hydraulic machines have been **in use fourteen years** and are doing as good work now as when first installed. **Now,** we don't claim our machines are best simply because they have been longest on the market, but **because** we have been making a study of cold tire setting all these years and improving our machines as experience and observation taught us, and when you buy a **"West Hydraulic"** you get the benefit of this experience. Some people knowing **our** machines would set tires cold satisfactorily, thought some other would do as well—and the price was cheap—also machine. Now they wish they had bought a **"West Hydraulic."** **If you make a similar mistake it's your own fault.**

Buy a **"West Hydraulic"** and be happy. Hand or Power machines.

THE WEST TIRE SETTER COMPANY, Rochester, N. Y.

Digitized by Google



The renown of Harland's English Varnish has been heralded to every part of the world, and its sterling merit recognized by all vehicle builders who desire strictly high-grade varnish. Quality is our slogan, and it is our unsurpassed quality which has given our varnishes a universally pre-eminent position and made them the standard with which all others are compared.

For the Best Wearing, Lasting and Most Beautiful Finish, Use

HARLAND'S ENGLISH VARNISH

It's the cheapest in the end.

WM. HARLAND & SON

FACTORIES:
Merton, London S. W., England

AMERICAN HEADQUARTERS:
168 Center St., New York
General Manager for United States and Canada, H. HAGGER

WESTERN MANAGER: C. W. SCHOOLEY
40 Dearborn St., Chicago

Digitized by Google

ESTABLISHED 1835

John W. Masury & Son

MANUFACTURERS OF

Superfine Coach Colors and Finest Carriage Varnishes

NEW YORK and CHICAGO

Digitized by Google

FLINT VARNISH WORKS

SPECIALTIES

Flint White Finishing
Flint White Rubbing
Pale Durable Gear
Flint Durable Gear

THE FLINT LINE

VARNISHES

FOR

Automobiles, Coaches, Carriages and Wagons

FLINT -:- -:- -:- -:- -:- -:- MICHIGAN

Digitized by Google

PIERCE'S

"UZATONA"

THE ORIGINAL CONCENTRATED RED



THE STRONGEST COLOR KNOWN. THE MOST BRILLIANT RED MADE. SUFFICIENT QUANTITIES FURNISHED GRATIS TO MANUFACTURERS FOR DEMONSTRATING UPON APPLICATION.

F. O. PIERCE COMPANY,

SOLE MANUFACTURERS

NEW YORK.

Please mention "The Hub" when you write.

Digitized by Google

HIGH CLASS ENGLISH VARNISHES

Nobles & Hoare

Cornwall Road, Stamford Street

LONDON

TRADE NOBLES & HOARE NH LONDON MARK

Sole Agents in United States **POMEROY & FISCHER** New York

28 and 30 Frankfort St. (P. O. Box 1224)

"IT STANDS ALONE"

Johnston's

226 RED

GROUND IN JAPAN

GUARANTEED
PERMANENT
GOOD BODY

20c Per Pound

SAMPLE ON REQUEST

The R. F. Johnston Paint Co.,
Cincinnati, O.

Digitized by Google

CONGRATULATIONS
and
SOME OTHER THINGS.

The Murphy Varnish Company

which has been on the road nearly as long, lifts its cap while THE HUB turns a half century.

When the good fellows of that Journal began to revolve their anniversary scheme, of course they spoke to us about it—they wanted to complete their fiftieth year with

THE PROPER FINISH.

We gladly wheel into line, and axle-erate the joys of the occasion, giving them "the fine varnish of compliment" which flows on easily and evenly, and does not check.

With firmly braced convictions and smooth-running enthusiasm and dignified carriage, they have done much to speed the recognition of genuine values—and that's the sort of vehicle we want.

It was Pharaoh's charioteer—was it not?—who remarked that the hub is a tough proposition. Well, the varnish that goes with it, through tough wear and weather, must have a good deal of the same quality. Unless they are jokes on the trade, neither will be cracked.

We are not going to spring any new argument; and we do not need to to coach builders on the familiar reasons why—they all know

THE VARNISH THAT LASTS LONGEST.

Like their own finest products, it is made of selected materials, well seasoned and well balanced. It has the light and strong body which goes farthest with least effort and expense. It tired out criticism and gave the dust to competition, away back yonder.

The great question for carriage manufacturers is whether expenses travel in

SPAN or TANDEM.

Manufacturing cost and selling cost are usually a matched pair. If the selling cost be greatly reduced, you may put it in front as a pony.

Digitized by Google

Krupp, the great gun man, is reported to have said: "In the early days of my work, I found that the cost of manufacture had been studied with infinite care and reduced to a minimum; but that the selling cost was at loose ends. I made up my mind that I could add considerably to the manufacturing cost and sell at the same price and make vastly more money. The perfection of the product would subtract two or three times as much from the selling cost."

MURPHY CARRIAGE VARNISH

reduces the selling cost. It has earned public confidence. It is an effective appeal. Our oldest patrons are free to say that—

IT IS TRUSTWORTHY—
IN THE SHOP,
IN THE SALESROOM,
ON THE ROAD.

Krupp's first proposition does not apply. Murphy's Carriage Varnish does not increase the cost of manufacture. It may cost more by the gallon, but it costs less by the job, and a great deal less by the year.

It saves the *painter's* time, as well as the salesman's time.

Its fineness and smoothness enable each gallon to cover more ground.

It puts off the day of repairing.

EXCEPTIONS.

Everything about it is right up to the limit—except the price.

It is used everywhere with special profit—except on snide work.

It pleases everybody—except competitors.

MURPHY COLORS

give the proper foundation for Murphy Varnish. The best varnish on a faulty color is like a fine color on basswood. We make the colors to protect and insure the values of our varnish. They are exactly adapted to the fine character of our varnish.

Their ingredients are genuine.

They are perfectly ground.

You can depend on them.

The price is moderate.

We have them in every shade.

We guarantee to match any shade that we ever sold at any time—not fairly well, but absolutely.

Digitized by Google

INVESTIGATE THE DITZLER SYSTEM OF CARRIAGE PAINTING

Primers
(LIQUID FORM)
Very penetrating;
holds grain of wood perfectly.

Body Filler
(PASTE FORM)
An intermediate coat between Primer and Roughstuff.

Roughstuff
(PASTE FORM)
Free Rubbing.
Absolutely NON-POROUS

DC CO.

Gear Fillers
(PASTE FORM)
Black, Red and Yellow, in shades suitable for our Color Varnishes.

Color Varnishes
Black, Four shades of Red,
Four shades of Green,
Three shades of Yellow.
Solid covering,
Free working,
Brilliant and
Permanent.

Japan Colors and Elastic Gear Colors
Unequaled in
TONE,
STRENGTH
and
DURABILITY

MOST ECONOMICAL, QUICKEST AND DURABLE. FOR CARRIAGE AND AUTOMOBILE WORK

MANUFACTURED ONLY BY

DITZLER COLOR CO.

R. E. RODRIGUEZ
EASTERN JOBBER

DETROIT, MICH.

91 CHAMBERS ST.
NEW YORK

THE HUB, NY. CURLEY

Digitized by Google

Dependable Varnishes

Uniform Quality! Uniform Price!

Progressive methods have made the Standard the leading varnish maker of the world.

For years its label has stood for best quality—**and always shall.**

It is on a basis of continued progressiveness and maintained merit that your patronage is respectfully solicited.

Carriage Varnishes

made with a view not only to meeting the exactions of hard usage but also the convenience of the shop. They are positively and noticeably less sensitive to atmospheric changes than any other now marketed.

Automobile Varnishes

that were given years of experimenting and testing and which now represent the very extreme of durability.

Standard Varnish Works

Largest in the world and first to establish definite standards of quality

New York
29 Broadway

Chicago
2620 Armour Ave.

Toronto
International Varnish Co., Ltd.

London
27 Bevis Marks

Berlin
41 Ritterstrasse

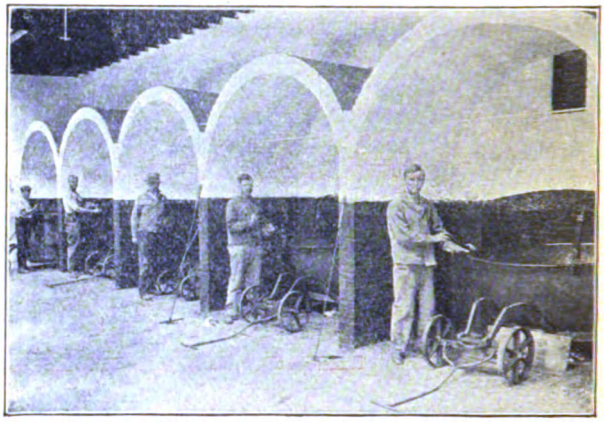
Brussels
41 Rue De La Bienfaisance

Please mention "The Hub" when you write.

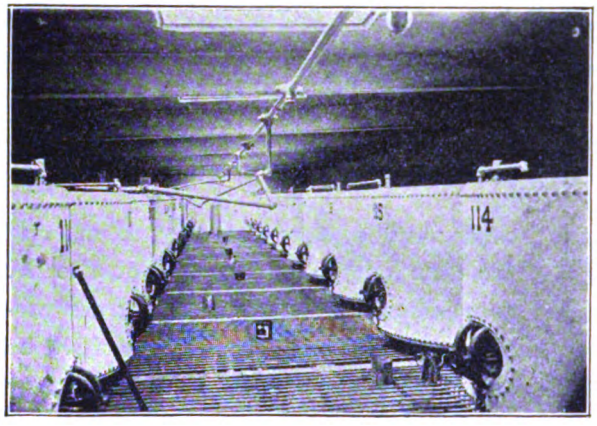
Digitized by Google



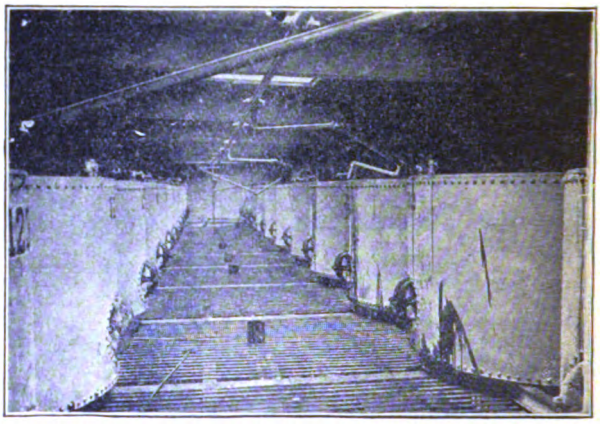
Main Plant



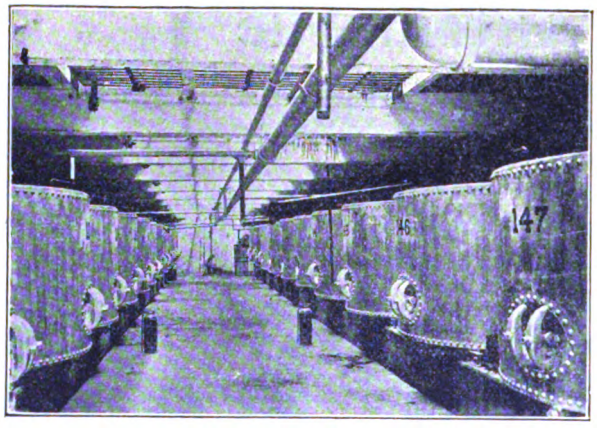
Melting Room.



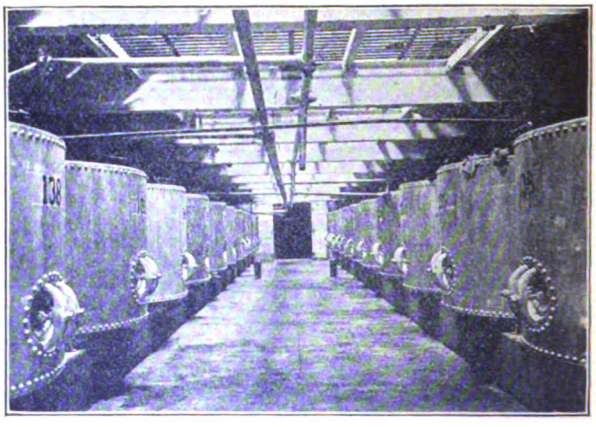
Tank Room



Tank Room



Tank Room



Tank Room

THE C. A. WILLEY COMPANY show above a view of their main plant and also a view of their melting room and four views showing tankage capacity, where the Varnishes and Japans are manufactured and stored for the Undercoatings, Paste and "Elasticgloss" Colors, and Specialties they produce for the Carriage, Automobile and Passenger Car industries exclusively. See reading pages concerning the capacity of these works.

C. A. WILLEY COMPANY

Manufacturers of Specialties in Carriage, Automobile and Car Paints, Colors, Etc.

HUNTER'S POINT, NEW YORK CITY

Digitized by Google

Established 1858

BERRY BROTHERS'
CARRIAGE VARNISHES

have long been the accepted standard for this work, and, in point of brilliancy, durability and satisfying results, are easily the most desirable.

CORRESPONDENCE INVITED

BERRY BROTHERS (Limited)

New York
Boston
Philadelphia
Baltimore

DETROIT, MICHIGAN

Canadian Factory:
Walkerville, Ontario

Chicago
Cincinnati
St. Louis
San Francisco

WING
RUBBER CARRIAGE
TIRES



are made from tough, durable, lively New Rubber. QUALITY is the first consideration. Our "Wing" Tire will outwear several ordinary rubber tires. The wings (see cut) keep water, sand and grit from working between the channel and the tire, to wear out the tire from underneath. Write for particulars.

GOODYEAR AKRON, OHIO
TRADE MARK.

The Goodyear Tire & Rubber Co.
Carriage Tire Dept.
Akron, Ohio

BRANCHES: Boston, New York, Buffalo, Chicago, Cincinnati, Detroit, St. Louis, Denver, Los Angeles, San Francisco.

81 Years' Experience in Every Can

E.S. 1827 &CO.

Edward Smith & Co.

Varnish Makers and Color Grinders

New York
45 BROADWAY

Chicago
3532 SOUTH MORGAN ST.

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

C. T. RAYNOLDS & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

Digitized by Google

HIGHEST GRADE VARNISHES

"MIGHTY TO WEAR"

NEW YORK:
320 Fifth Ave.

Factories:
NEWARK, N. J.

Beckwith-Chandler Company

Manufacturers of

Highest Grade Carriage and Motor Car Varnishes



"THE BADGE OF QUALITY"

DURABLE

Mander's English Varnishes

MANDER BROTHERS, Wolverhampton, Eng.

Works Established 1803

BRILLIANT

RELIABLE

A. E. LOUDERBACK

Agent

118 HUDSON ST. NEW YORK CITY

CARPENTER-MORTON COMPANY

Sole Agents for New England

BOSTON MASSACHUSETTS

ECONOMICAL

Please mention "The Hub" when you write.

Digitized by Google

New! Bright! Attractive!

We have added to our list of colors for 1909 the following:

Olympic Red

Bath Red

Thistle Green **Indian Blue**

Moss Gray

Marathon Gray

There is novelty, excellence and pleasing combinations to be secured by the use of these new shades, and their brilliancy is made perfect by the use of

TRADE VALENTINES MARK

Valentine & Company

New York

Chicago Boston Paris Amsterdam Toronto

Please mention "The Hub" when you write.

Digitized by Google

TO OUR FRIENDS:

It has been our aim for some time to produce a full line of Top Hardware suitable for carriages, auto buggies, buggy autos and automobiles. We have seen the demand for these goods coming, and felt that each particular vehicle demanded its own class of Carriage Top Hardware.

Buggy Bow Sockets.

Buggy

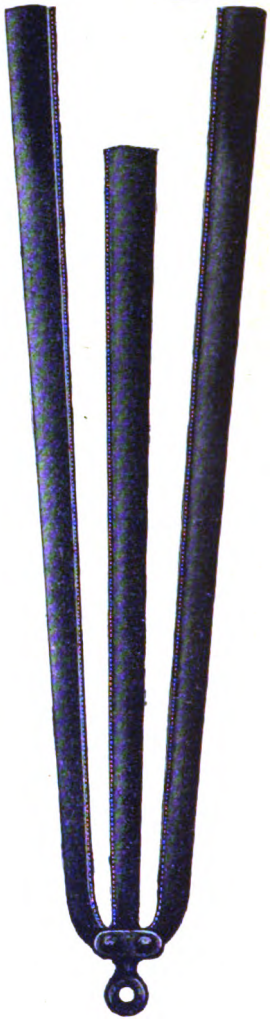


On bow sockets, in particular, we know that the lines of a buggy and a light carriage are right and should be maintained strong enough to stand the demands made upon the bow socket, but light enough in appearance to be in harmony with the other items used in the buggy. We maintain that strength, beauty and grace are the essentials in a carriage bow socket.

We do not believe in a socket that is sold for the buggy one day and for the automobile the next.

We have studied all the criticisms on buggy sockets that have come to us in an experience of fifteen years, and believe the criticism has been entirely in regard to the back bow's bending occasionally near the prop rest. This we have overcome. We guarantee our buggy bow socket is the strongest socket made to-day.

Auto Buggy



Auto Buggy and Buggy Auto Bow Sockets.

Auto buggies and buggy autos are demanding a bulkier style of bow socket, and we have brought out a socket midway between the buggy socket and the automobile socket, ready to meet that demand. We do not claim that it meets the demand of the fine carriage maker, nor of the automobile maker, but it does meet the demand for the auto buggy and the buggy autos. This bow socket is in harmony with the heavier lines of the buggy auto and auto buggy.

Automobile Sockets.

The automobile has its demand for a bow socket, and we have met that by bringing out the medium sized automobile socket for runabouts and lighter class of vehicles in this line, and the large size sockets for the heavy touring cars.

We have all the lines of carriage top hardware necessary to go with these bow sockets, and solicit your specifications. At the same time we ask you to remember that we have the largest capacity, and have made the longest study of the details of these goods, so that we can make them right.

Our prices are fair. We can make shipments promptly. We solicit your business.

We also have

Shifting Rails Top Joints Top Trimmings

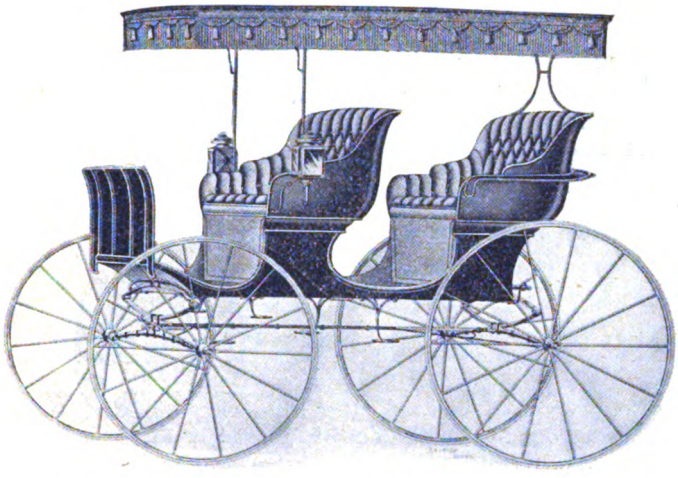
Cortland Carriage Goods Company

CORTLAND, N. Y.

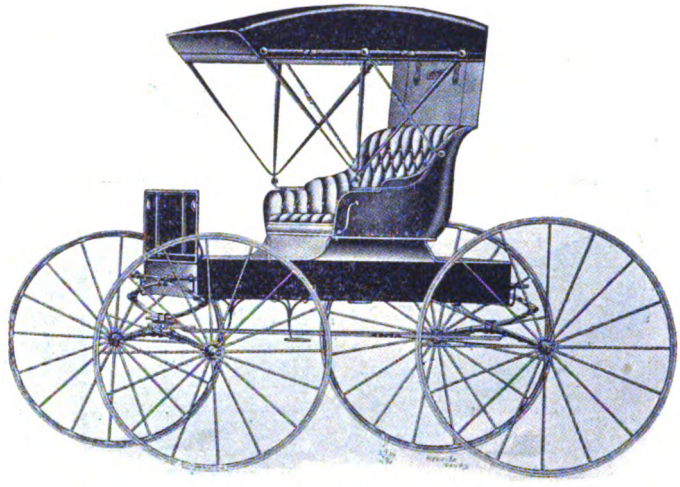
Digitized by Google

Always in the Lead with Attractive Styles

QUALITY FINISH DURABILITY



No. 684. Light Auto Seat Surrey.



No. 515. Auto Seat Two-in-One Buggy.

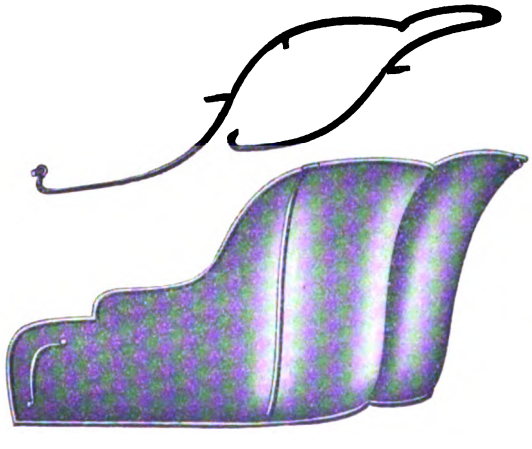
We Build a Full Line of Pleasure Vehicles, Medium Priced, Just What Your Trade Demand

Rattermann & Luth, Cincinnati, Ohio

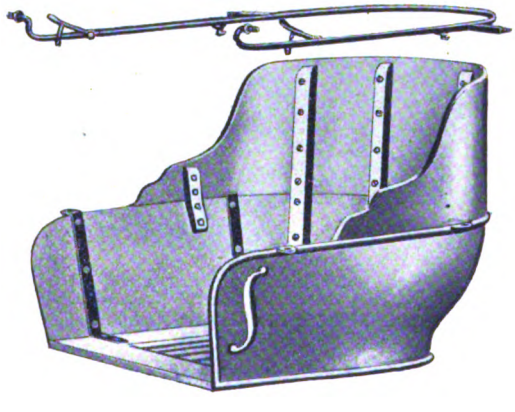
WRITE US FOR AGENCY.

Carriage Body and Seat Woodwork

We Build High Grade Surrey and Phaeton Bodies



No. 51



No. 30

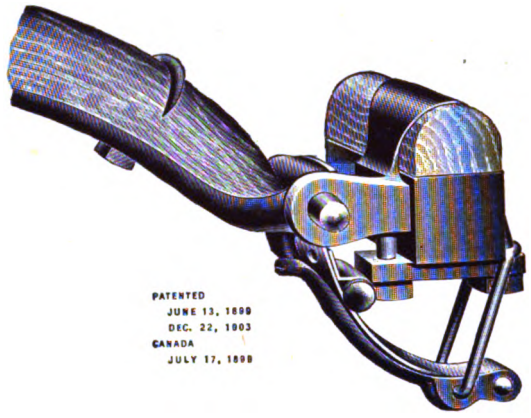
AUTO SEATS A SPECIALTY

The Highland Carriage Company

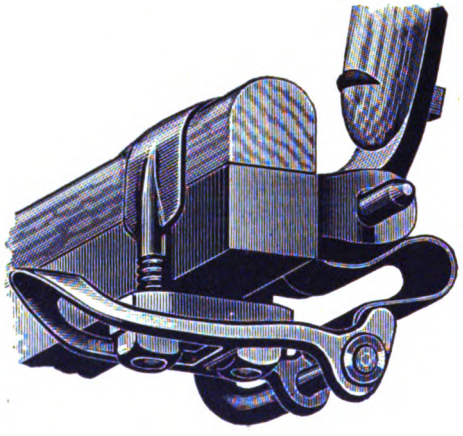
Station P. **CINCINNATI, OHIO**

Digitized by Google

The Fernald Line
OF
Quick Shifters and Anti-Rattlers



THE FERNALD QUICK-SHIFTER.



Patented July 7, 1908.

THE SPITZLI COUPLER.

The Fernald Line of Quick-Shifters is known everywhere and recognized as the best made for the class of work for which they are intended; that is, for medium-priced work.

The Fernald Quick-Shifter

is more largely used than any other shaft-coupling device made. Has been before the public nine years, and in that time thoroughly proved its merits. It attaches to ordinary shackle and shaft-eye (requiring no special irons) and makes shafts and pole instantly interchangeable. Is made of best material throughout and properly tested.

The Spitzli Coupler

is a newer article, but with exceptional good points. Is only practical quick-shift made with reverse lever, so there is no chance of catching weeds or brush. Fits any rig, attaching to ordinary shackle. Equipped with steel bolts and correctly constructed in every detail.

Our Line of Accessories

Empire State Shaft Coupler
1901 Wire Quick-Shifter
Fernald Double Trace Holder
Pole and Brake Springs
New I. D. Seats
Whip Sockets
Gem Wire Anti-Rattlers
Miller Wagon Jacks
Victor Tail Ties
Burton Anti-Rattlers
1901 Wire Anti-Rattler
Dash Rein Holder
Neck Yoke Centres
Peerless Third Seats
Coil Axle Washers
Solid Axle Washers
Buggy Boot Springs
Ladd's Anti-Rattlers

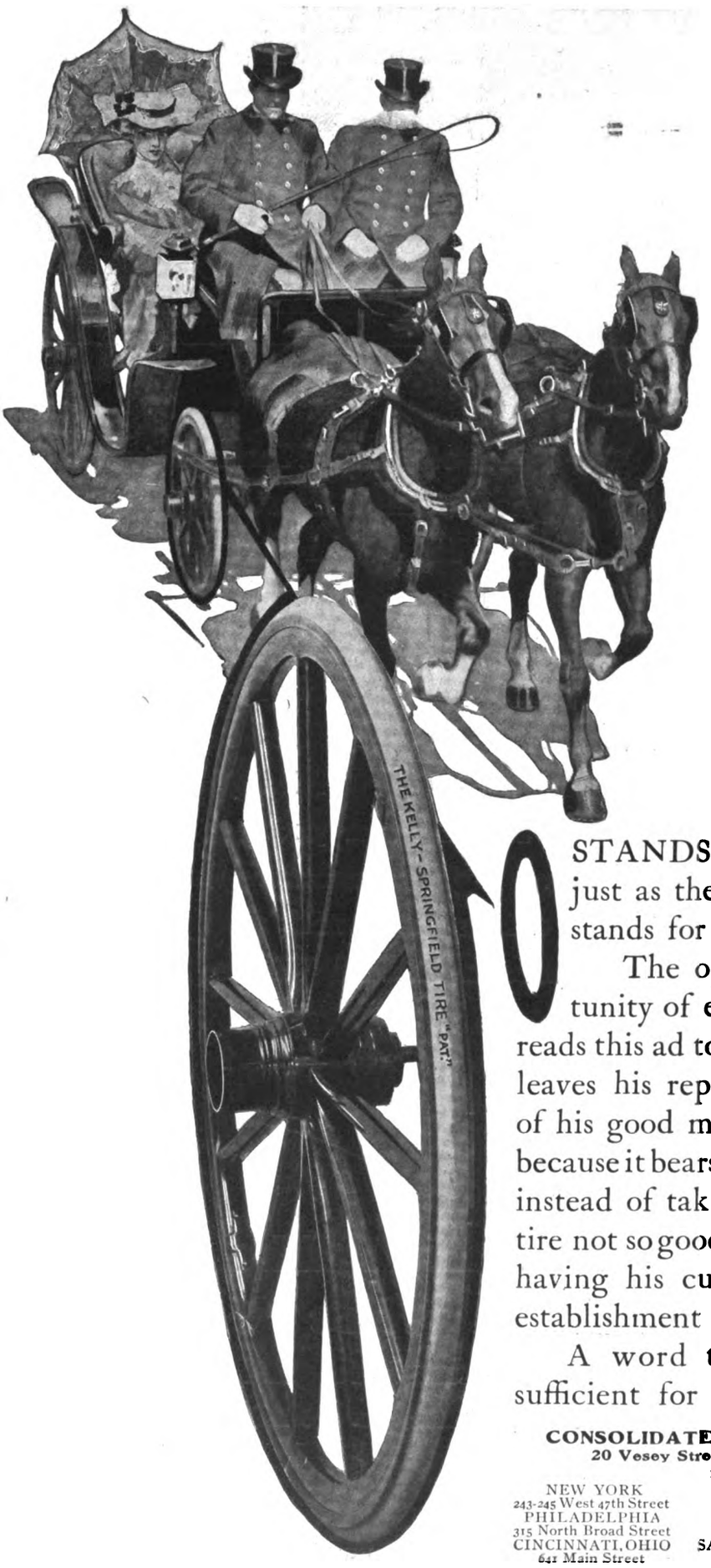
Any manufacturer will furnish our Quick-Shifters on your jobs if you so specify. Our goods are also carried in stock by jobbers in carriage goods, hardware, saddlery and implements. If you are unable to get what you desire, write us direct. Send for catalogue anyway.

Fernald Manufacturing Co., Inc.

NORTH EAST, PA.

Largest Manufacturers of Quick Shifters and Anti-Rattlers in the World

Digitized by Google



O STANDS FOR OPPORTUNITY just as the name Kelly-Springfield stands for quality in rubber tires.

The opportunity is the opportunity of every carriage dealer who reads this ad to make every carriage that leaves his repository an advertisement of his good methods of doing business because it bears Kelly-Springfield Tires, instead of taking a chance on another tire not so good, not so well known, and having his customer judge his entire establishment by that particular tire.

A word to the wise builder is sufficient for Kelly-Springfield Tires.

CONSOLIDATED RUBBER TIRE COMPANY
20 Vesey Street, New York, and Akron, Ohio

BRANCH OFFICES:

NEW YORK
243-245 West 47th Street
PHILADELPHIA
315 North Broad Street
CINCINNATI, OHIO
641 Main Street

BOSTON, MASS.
11-13 Hawkins Street
ST. LOUIS
2340 Olive Street
SAN FRANCISCO, CAL.
507 Howard Street

CHICAGO
435 Wabash Avenue
DETROIT, MICH.
294 Jefferson Avenue
AKRON, OHIO
Cook and Kelly Aves.

Digitized by Google



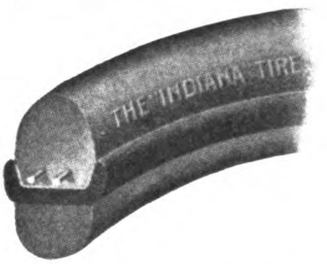
THE "INDIANA" TIRE



For Perfection in Manufacture, Quality and Durability, THE INDIANA TIRE is not excelled.

This Tire is not an experiment, but has stood the test.

A letter addressed to our home office or our Chicago office will secure our prices, which are right, and samples of Tires, as well as full information. Write now.



Indiana Rubber & Insulated Wire Company

Jonesboro, Ind.

Chicago Office, No. 166 Lake Street.

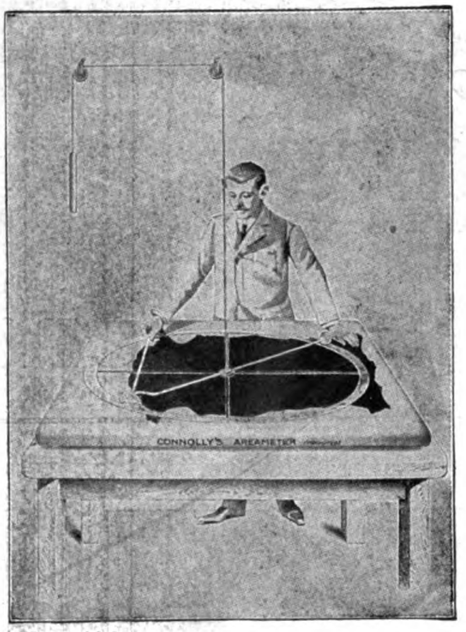
THE HUB CURLEY

Please mention "The Hub" when you write.

Digitized by Google

CONNOLLY'S AREAMETER

Proved the Sensation of the Shoe & Leather Market-Fair



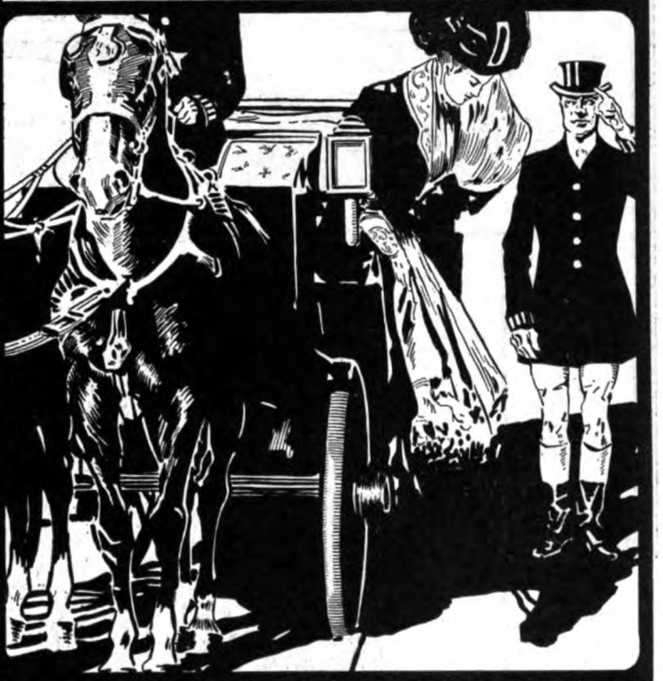
Everybody said: "It is the most reliable machine for measuring hides, patterns, etc., they ever saw." Get our recent circular and read our **GUARANTEE**, etc. Price of Machine complete, $100. Patented in United States and Canada. Agents wanted. Write now to

TUFTING MACHINE SUPPLY COMPANY

1200 Michigan Avenue, CHICAGO, ILL.

Exclusive Agents for U. S. and Canada

STEIN DOUBLE CUSHION TIRE





Patented 1892-1902.

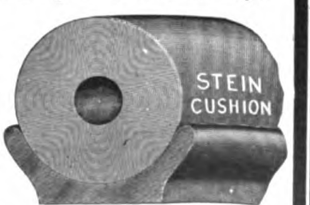
A Perfect Tire is the most economical tire to use.

STEIN DOUBLE CUSHION TIRE

HAS DEMONSTRATED THIS FACT.

In Quality they are superior to all other makes, and for Comfortable Riding and Durability, they have no equal.

All users of Stein Tires will testify to these facts.



Write for our proposition and prices.

STEIN DOUBLE CUSHION TIRE CO.

Akron Ohio

The Herbrand Co.

Fremont, Ohio

Manufacturers of

High Grade Drop Forged Body Loops

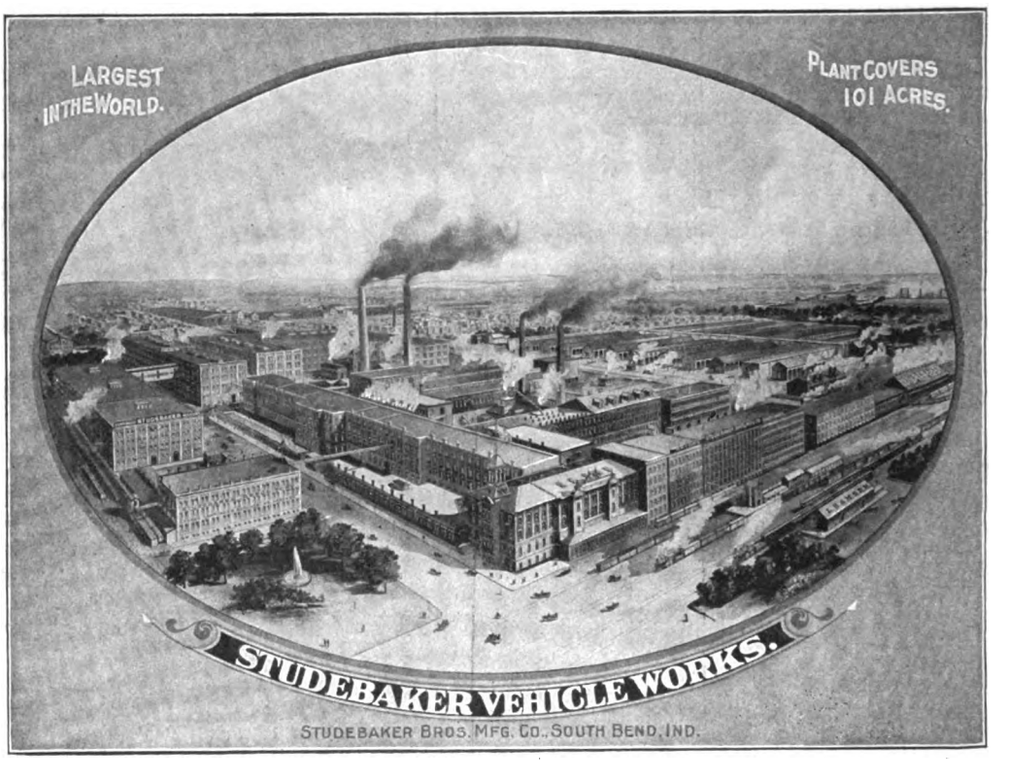
AND

Bailey Hangers

Digitized by Google

Studebaker

Largest Manufacturers



Studebaker Automobile Company

High Powered Gasoline Pleasure Cars, Electric Pleasure Cars, Electric Delivery Wagons and Trucks; 750 pounds to five tons capacity.

Studebaker Bros. Mfg. Co.

Please mention "The Hub" when you write.

Digitized by Google

Studebaker

of Vehicles in the World

Studebaker Bros. Mfg. Co.

Farm Wagons, Mountain Wagons, Business Wagons, Contractors' Wagons, Buggies, Carriages and Vehicles of Every Description.

World Buggy Company

A Splendid Line of Buggies and Fine Carriages Designed to Fill the Demand for Good Dependable Vehicles at a Moderate Price.

South Bend Line of Business Wagons

A Full Line of Substantial Delivery Wagons, Correct in Design, Attractive in Appearance, Selling at a Medium Price.

Studebaker Harness Company

Manufactures a Full Line of Harness of the Same High Quality which has Made Studebaker Vehicles Famous the World Over.

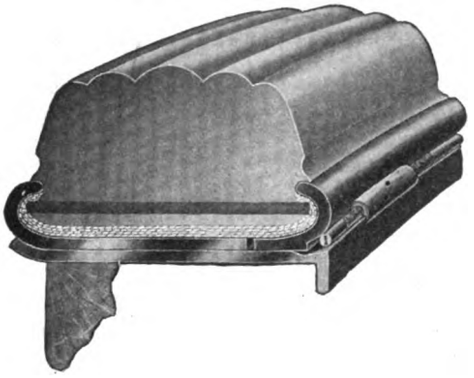
South Bend, Indiana

Digitized by Google

Swinehart TIRES

Meet Every Demand of Rubber Tire Users in a Way that Pleases Customers

QUICK DETACHABLE TRUCK TIRES



Resilient, Durable, Economical, Non-Skid, Secure Fastening

With quick detachable rims afford a most satisfactory truck equipment.

Progressive manufacturers are remarking about this successful equipment. Owners are specifying it. Users are recommending it.

CONCAVE BEADED TREAD TIRES



For Pleasure Autos, Light Deliveries, Ambulances, Trucks and Buggy-Type Autos.

Clincher fastening, most secure ever devised; grooved sides and large amount of rubber give increased resiliency and long life.

Reputation established for years as most resilient and durable cushion tire on the market.

Write for further information, and catalog "S."

We will exhibit at the Carriage Dealers' Show, New York City, Oct. 5-10, 1908.

The Swinehart Clincher Tire and Rubber Company

AKRON, OHIO

New York, 875 Seventh Ave. Chicago, 1231 Michigan Ave.
Denver San Francisco
Boston Detroit St. Louis

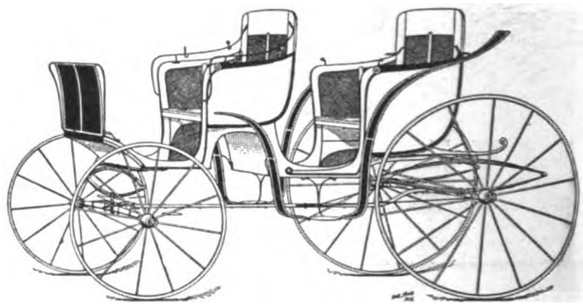
Vehicles IN THE White

With Trimmings or Without

THAT'S THE WAY WE MAKE THEM

Greatest Variety of Styles on the Market.

AUTOMOBILE BODIES A SPECIALTY



Our Line of Gears

Will interest you. More than fifty different styles. Write for our Catalogue.

We will exhibit at the Chicago Convention, and invite our friends to see us there.

Schubert Bros. Gear Co.

Oneida, N. Y.

Established C. COWLES & CO. **1838**

TWENTY YEARS OLDER THAN THE HUB.

Forgings, Mountings and Trimmings

Articles made exclusively for individual manufacturers: Carriage type of Lamps for Limousines, Broughams and Taxicabs. Electric Cigar Lighters, Push Button Switches, Security Locking Handles, Electric Megaphone Speaking Tubes, Dome Lights and Batteries, Corner Lights.

C. COWLES & COMPANY

NEW HAVEN, CONN.

Digitized by Google

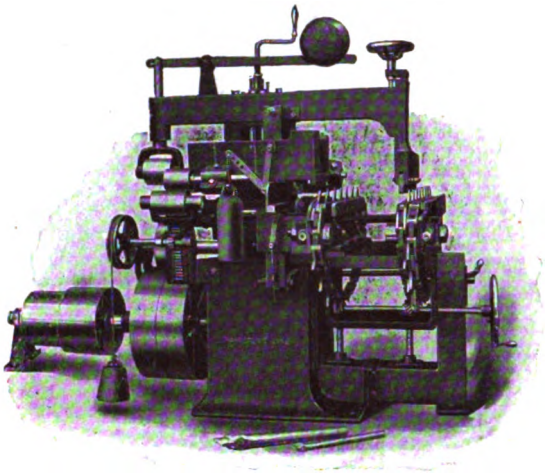


Digitized by Google

HAMILTON-OHIO-LINE WOOD WORKING TOOLS

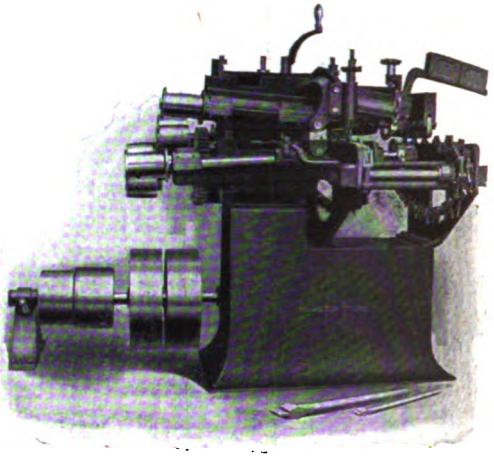
For Automobile Body and Wheel Work.

Carriage, Wagon, Hub, Spoke, Rim and Wheel Factories



Hamilton Spoke Tenoning and Mitering Machine No. 298





Hamilton Automatic Spoke Throating Machine No. 299

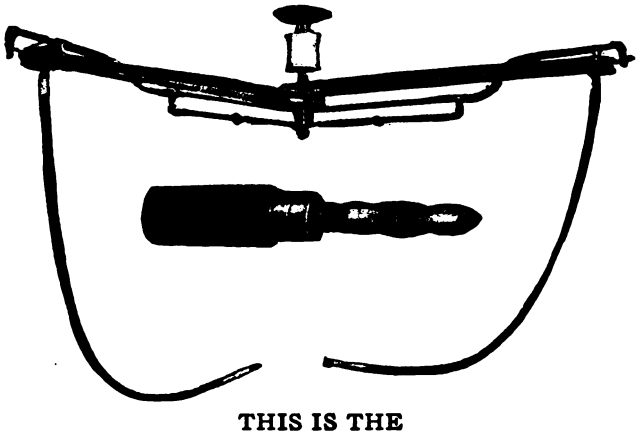
Hamilton Dowel Borer No. 315.

Disk Sanders, Belt Sanders, Spoke Sanders, Wheel Sanders, Gear Shapers, Scroll Eyeing Machines, Gear Rounders, Spring-Bar Boring Machines, Seat-Back Benders, Rim Planers, Rim Rounders, Rim Borers, Rim Cut-Off Machines, Wheel Boring & Screw Driving Machines, Spoke Lathes, Spoke Cut-Off Saws, Spoke Tenoning and Mitering Machines, Spoke Throaters, Spoke Facers, Wheel Facers, Wheel Tenoners, Hub Lathes, Hub Mortisers, Hub Borers, Wheel Boxers, Wheel Presses, Tire Truers, Tire Bolters, Spoke Cut-off Machines, Band Saws, Rip and Cross-cut Saws, Planers, Matchers, Moulders, Shapers, Boring Machines, Universal Wood Workers, etc., etc., etc.

THE BENTEL & MARGEDANT CO., Hamilton, Ohio, U. S. A.

There Are Others

BUT NONE SO GOOD



THIS IS THE

RADIAL BORING MACHINE

THAT GIVES SATISFACTION.

SPECIAL PATENTED PLUG BIT AND OTHER ATTACHMENTS IF DESIRED.

STEEL LINK CORE, STRONG AND DURABLE

PRICES:

Double Arm Machine, with Chuck.....$85.00
Single Arm Machine, with Chuck..... 65.00
A Discount of 15 per cent. when cash accompanies order

The Flexible Shaft & Tool Co.

BELLEFONTAINE, OHIO.

INDEPENDENT OF ALL COMBINATIONS

The Eagle White Lead Company's

"EAGLE" BRAND OF "OLD DUTCH PROCESS" WHITE LEAD

ALSO "EAGLE" RED LEAD, LITHARGE AND ORANGE MINERAL

Our **Special Coach and Carriage White Lead** is the best white lead on the market for this class of work.

We claim for our **"Eagle" Red Lead** that, for Durability, Color, Texture, Covering and Spreading Properties, it is not excelled by any red lead in the world. It requires more pure linseed oil to the hundred pounds, and when properly mixed it will not settle. It is the best foundation coating for vehicles known.

New York—54 Maiden Lane
H. C. Russell, *Manager*
Philadelphia—1901 Callowhill St.
Baltimore—447 North St.
Geo. O. Shivers, *Manager*
Buffalo—Builders' Exchange
A. S. Goltz, *Manager*
Pittsburg—
Pittsburg Paint Supply Co., *Agts.*
Cleveland—
The Hale & Holmes Co., *Agents*
Chicago—125-127 N. Peoria St.
E. B. Bennett, *Manager*
St. Louis—405a Benoist Bldg.
B. P. Temmeyer, *Manager*
Kansas City—
W. R. McDonald, *Agent*
New Orleans—
Jno. R. Todd & Bro., *Agents*
Dallas—Jack H. Frost,
Agent for State of Texas

Eagle White Lead Co., Cincinnati, Ohio

Digitized by Google

The Hub

Copyright, 1908, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. L. NEW YORK, OCTOBER, 1908. No. 7.

THE TRADE NEWS PUBLISHING CO. OF N. Y.
Publishers of THE HUB

J. H. Wright, *President.* G. A. Tanner, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

Jacob H. Klein, *Technical Editor.*

REPRESENTATIVES:

J. Henry Klune. J. G. Tanner. B. H. Hull.

The Hub is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of Trade News Publishing Co.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

France.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

Germany.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

England.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

Our Fiftieth Anniversary.

The fiftieth anniversary of The Hub, the oldest carriage journal in the world, affords an opportunity for referring to not only this journal but the great industry it represents and to the achievements in industrial directions in the past half century, a half century replete with events, deeds and accomplishments and developments which in their profound bearings surpass the accomplishments of centuries. The purely historic features of this journal are dealt with by a familiar hand in another portion of this issue. The carriage industry, when the progenitor of The Hub appeared, was in its infancy so far as coherence of action or harmony of ideas as to carriage construction in its broad sense were concerned. The effort of its earlier publishers was directed along educational and technical lines wherein the completed vehicle was more frequently used than the parts. An effort was made all through the earlier years to evolve methods of construction, to arrive at a common understanding as to principles underlying construction and to establish if possible an acceptable style of pleasure vehicles. This was no easy matter, first because there was no well defined purpose, no clear ideas as to styles or standards, and second, because so many of the shop workmen and foremen were British born, who came here with all the preferences and prejudices of the land of their birth and early shop education. Besides each shop or factory was a law unto itself, with its secrets.

The early publishers and writers took a broad view of the carriage building problem and instinctively saw its great future. Between the close of the civil war and the organization of the C. B. N. A. New York became pre-eminently a building and carriage commercial center. This journal was in those years especially active in its efforts to spread a knowledge of the technicalities of construction and it encouraged and aided those interests which were making this city a great center. It sought out the best talent and skill in the craft and employed it to make common property the highest skill to be found. This course has been persistently and consistently followed ever since, and its readers have been supplied month by month with the ideas, suggestions, developments and achievements of draftsmen and others engaged in the designing and construction of carraige work in all it varied branches.

The Hub has recorded the steps of progress made, as well as indicating the direction in which progress was being made. Its pages month by month and year by year have been replete with descriptions and illustrations of the highest classes of standard carriage work. It has seen its teachings embodied into shop and factory practice and has seen a large clientage built up who absorbed valuable teachings from its pages. It rendered all the aid in its power to develop custom work, when custom work constituted the great volume of work, to its highest level.

When the machinery age of the carriage industry dawned, it perceived the vast possibilities to the industry in the use of mechanical appliances for the rapid multiplication of like vehicles. By its broad comprehension of the great field which opened up it encouraged enterprises to employ mechanical aids in the shape of machinery and tools. The machinery idea did not take at first. The old idea of hand work, especially in custom work, prevailed. Many builders ridiculed the idea of making first-class work by machinery. They had a pride in imparting a certain degree of individuality to each job turned out. Originality or what passed for it was the keynote of custom work.

The beginning of the machinery age in the carriage industry was the real beginning of practical drafting, contradictory as the statement may appear, and The Hub contributed its full share to the development of drafting along the new lines. Men began to study the drafts

Digitized by Google

that were published. New styles and designs sprang into existence. Shops increased in number and capacity, and workmen more or less informed were enrolled. Hence it was that plans to go by came to be so generally required and the art and science of drafting developed in a new direction.

The Hub took an active and pioneering part in the new industry which soon after began to spring into life viz., the manufacture of parts—the accessory industry, which has since exerted such a powerful influence in the development and simplification of carriage building. No one foresaw the limits it would reach. It began with the manufacture of wheels and axles. It soon spread to include everything which entered into carriage construction. The carriage shop became a place for the assembling of the prepared parts. But The Hub never weakened in its aid of and co-operation with the great custom branch, which despite the wonderful mechanical developments, will always remain a part of the carriage building industry. The illustrations of new machines and tools, the record and illustration of patented inventions has long been the policy of The Hub in order that every feature and every element of progress should be recorded and spread before its readers who were found in every considerable shop and factory in the United States.

In addition to keeping the readers fully advised as to the development of the carriage industry at home, it kept in touch with the centers of carriage building abroad and continued to present the best thought and best work and most advanced ideas of British and continental draftsmen and builders.

The Hub has kept pace with the progress of this great industry for half a century and it is better equipped today than ever for the continuation of the great work. It thanks its supporters and friends for their confidence and good will and will continue to merit them.

The Hub's Biography.

"The Story of The Hub," as told by Mr. Charles B. Sherron in this issue we are sure will be found very interesting reading by members of the craft, since the story of The Hub can well be said to be the history of carriage building. Because of Mr. Sherron's early connection with the publication, and his intimate relations with the trade ever since, he was peculiarly fitted for the task.

British Carriage Builders in Paris.

It was a happy thought which led to the holding of the twenty-first annual meeting of the Institute of British Carriage Manufacturers at Paris, Sept. 7, 8, 9. Perhaps some day the British association may extend an invitation to our C. B. N. A. to hold an annual meeting in London. London is no farther away from New York than San Francisco is and our carriage builders would not think it a great strain on them to jump into a Pullman and ride to San Francisco. No doubt some day the metropolis of the Pacific Coast will be visited by our association for the holding of a convention. We took a ride to Atlanta, which some thought at first an out of the way place, but our visit to that Southern gem of a city corrected any such notion.

The visit to Paris was too recent to learn the particulars, but we all know Frenchmen are good hosts. The visitors had an opportunity of seeing some of the great carriage plants, plants of world-wide fame and seeing for themselves the methods and details of manufacture. When the British carriage builders invite us, they might at the same time invite the Paris builders and thus have practically a world congress of carriage builders as incidental to our annual meeting. The three nations have much in common. The cost of a trip to London in these days of cheap transportation would offer no serious obstacle. The visit would be delightful and instructive from every point of view. The spirit of getting together exists among all peoples. The spirit of travel has become almost a mania. The Atlantic Ocean has become a "pond." We will ere long be talking to London and Paris by phone if some of our optimistic electricians are not mistaken in their predictions.

The world is moving rapidly and its energies are at fever heat. Paper exchanges of fraternal greetings have been exchanged for years between American and British carriage builders. The next step in the natural order of events is to have an international hand-shake and a face-to-face talk with our brothers of the British Isles and possibly of France. Why not?

The Younger Men.

The disappearance of so many of the familiar names of the C. B. N. A. and the appearance of many comparatively new names is one of the signs of passing years. Possibly no other trade organization held its membership so solidly and continuously. The appearance in the successive annual proceedings of the same names and the appearance on the floor of the convention hall year after year of the same faces was indicative of the deep and earnest spirit of the men who had put their shoulders to the wheel. Within the past year or two there has been a rapid dwindling of the old wheel-horses. New names have appeared, new and earnest men are now seen and heard, men who have been brought up in the carriage industry and who hold the same high ideals of trade ethics and association possibilities. They are not new. They have simply been standing in the background and have been preparing themselves for the shouldering of the great work which the C. B. N. A. has for over a third of a century been carrying out.

Prices of Motor Buggies.

The problem which carriage builders have to solve in order to place this branch of their industry on bed-rock foundation is to reduce the cost within the means of the large class of prospective purchasers. This is rather work for the makers of the chassis. Certain builders are effecting progress in that direction but the reduction of cost will for some time remain within narrow limits.

Carriages at Fairs.

At most of the state fairs that have been held this year, there has been a somewhat larger exhibition of carriages than formerly. Within a few years the fair-exposition of carriages suffered. Just why it would be hard to say. This year, a year of depression, has witnessed a little revival in interest, possibly because builders felt the necessity of having their work seen.

Digitized by Google

THE STORY OF "THE HUB"

BY CHARLES B. SHERRON



EVEN though there are hundreds of trade journals published in the United states today, few have endured for a half century and although many of those who were connected with its early history have passed from the scene of their labors, The Hub continues to exist and is known and esteemed in all countries where vehicles are built.

However, The Hub was not the first publication devoted to carriage building, for, as far back as 1853, Cyrus W. Saladee started an annual publication devoted to the vehicle industry. It was in book form, containing about 150 pages of technical matter, with a supplemental chart containing the fashion plates. Only two numbers were issued.

The writer had long been in search of a copy of Saladee's book and in 1879 was rewarded in a measure. While in a small carriage shop, in West Virginia, he found the proprietor's infant child tearing the leaves from a book which proved to be the one so long coveted. A year's subscription to The Hub was given in exchange for it. It was then placed in the hands of a competent bookbinder, who repaired and rebound it as well as possible, and afterward placed in The Hub library, but was destroyed in the fire, which, a few years later, devoured the rest of their really fine collection of technical books.

After discontinuing his annual, C. W. Saladee began the publication of the Coach Makers' Illustrated Magazine, which was published at Columbus, Ohio, at that time only a small city and lacking prestige in the carriage world. However, Ezra M. Stratton became the agent in New York City, which added somewhat to its reputation.

It must be borne in mind that in those days, New Haven and Bridgeport in Connecticut; Newark and Rahway in New Jersey; Philadelphia and Wilmington were the great carriage centers, making the majority of heavy coaches then in use. At the same time, nearly every town of a thousand inhabitants north of the Potomac and Ohio Rivers had one or more prosperous "coach factories." They were coach factories even though the heaviest job they produced was a Rockaway or a Germantown.

All work was built to order and every workman was a skilled mechanic. The use of machinery was unknown and it was all hand work, each builder doing the best he knew how. The manufacture of bodies, gears, tops, etc., as separate industries, was unknown. The wholesale carriage factory with its systematizing labor and the assembling of parts, had not yet been evolved, while vehicle dealers did not appear until twenty years later.

Saladee's magazine lasted scarcely three years when it was discontinued, chiefly from lack of support as well as a bitter quarrel between C. W. Saladee and Ezra M. Stratton. The writer has had many talks with Saladee and he has told us some of the difficulties which he had to overcome. One of these was the difficulty of obtaining the names of vehicle makers, as there were no mercantile reports, no carriage directories, nor any lists from which to mail sample copies. The names were obtained one by one, in various ways, and the list carefully guarded as it was an important item in the stock account.

To resume: Saladee went to Europe on a business trip, leaving Stratton in charge, and, according to Saladee's story, Stratton immediately began preparations to launch a paper of his own. In after years we interrogated Mr. Stratton regarding this period of his life and he vigorously denounced Saladee's charges. However, Saladee's paper died and Stratton's paper was born.

In June, 1858, the first number of the New York Coach Makers' Magazine made its appearance, the "New York" in the title serving to give the paper metropolitan prestige, which was essential in those days. It was "Devoted to the Literary, Social and Mechanical interests of the Craft," the "literary" coming first, it is to be observed.

This magazine being ultimately merged with The Hub, it might be well to state that the "literary" feature was faithfully adhered to, not only by Mr. Stratton, but by Geo. W. W. Houghton, both of whom were scholars and did much to elevate the carriage industry, striving to make it a profession rather than a trade.

The first number of the New York Carriage Makers' Magazine, which is before us as we write, opened with a two-page biography of James Brewster, together with a full-page portrait. Then follows three columns of "Coach Making with the Poets"; three columns on "The Centralization and Manufacture of Carriages"; another three columns on "The Threefold Nature of Man," after which we read the opening chapter of "Coach Making Historically Considered and Incidentally Illustrated."

The foregoing will give an idea of the literary side of the magazine, while the technical part was excellent in its day. The fashion plates, of which there were four to one issue, showing only the side view and not in perspective, as now, illustrated both light and heavy carriages but no wagons.

In subsequent volumes of the magazine—perhaps eight or ten years later—Mr. Stratton wrote the most complete history of early vehicles which has ever been published. Though these articles were much ridiculed at the time, they certainly proved a valuable addition to carriage literature. The history was republished in a single volume, the title of which is "The World on Wheels."



Ezra M. Stratton.

The New York Coach Makers' Magazine catered almost exclusively to the proprietors of the shops, rather ignoring the workmen, and after the coach makers' unions were organized in every city immediately after the close of the Civil War, fought the union savagely, though the international union had established an organ of its own from which the Carriage Monthly subsequently emanated.

While this attitude was not conducive to big clubs in the shops, and could not swell his subscriptiron list, those names which he did have represented the purchasing power, so advertisers benefited.

First Advertisers.

Apropos of his advertisers, it might be well to note a few of the material men who supported those early issues of the

Digitized by Google

Coach Makers' Magazine, especially those who are still doing business. David Dalzell, South Egremont, Mass., heads the list. The Dalzell axle then—as now—was one of the best made. The Tomlinson Spring & Axle Co. and the Spring Perch Co., both of Bridgeport, Conn., also advertised axles. The former quit about ten years ago; the latter is still in business.

The Ives & Pardee Co., (now Walter W. Woodruff Sons & Co.) Mount Carmel, Conn., advertised mountings; Carey & Young and C. N. Lockwood, both of Newark, N. J., made carriage lamps; Carey & Co. are still in the lamp business at Philadelphia, though Mr. Carey died a few years ago; Dann Bros., New Haven, Conn., advertised wood-work; C. Cowles & Co., New Haven, offered carriage trimmings, while H. D. Smith & Co., Plantsville, Conn., advertised shaft couplings. Nine different firms exploited their varnishes in the Magazine, though they were all rather modest in their announcements. Among them was the house of Stinson, Valentine & Co., of Boston, who afterwards became owners of the magazine. Aside from Stimson, Valentine & Co., and one other Boston varnish house, all the advertisers in the New York Coach Makers' Magazine were located within a hundred miles of New York City.

No carriage goods were made west of Philadelphia, and if there had been it is questionable whether any eastern carriage builders of those days would have used them. There were fewer articles made then, and they were all sold through the jobbing houses, except perhaps springs and axles.

There were no body factories in those days; every carriage builder made his own bodies and gears, and in many cases he also made his own wheels, though his hubs, spokes and felloes were purchased. Such a thing as a top factory was unheard of, each shop employing its own trimmer either all or a portion of the time. Such were the conditions which prevailed during the first ten years of the New York Carriage Makers' Magazine.



THE NEW YORK COACH-MAKER'S MAGAZINE

DEVOTED TO THE LITERARY, SOCIAL AND MECHANICAL INTERESTS OF THE CRAFT.

Vol. I. NEW YORK, JUNE, 1858. No. 1.

The Coach-Maker's Portrait Gallery.

BIOGRAPHY OF JAMES BREWSTER, ESQ.

(WITH PORTRAIT.)

No species of writing is more deeply interesting than that of history, and no composition is of greater interest than that which records the history of a fellow-man. Should the subject of that history be a member of our own craft, that circumstance adds additional interest, and we are led instinctively to inquire: When and where was he born? What were his earlier tastes and predilections? What were his earlier advantages of education? What his peculiar trait of character as manhood developed itself? etc., etc. All these questions, we affirm, are perfectly natural, and often, when they are satisfactorily answered, we discover that, in this country, at least, our most distinguished men are those who, by untiring industry and an honorable course of life, have been the makers of their own fortunes. It is very true there may be exceptions to this rule—some "may have had fortunes thrust upon them"—but then they belong rather to the exception than the rule. It has come to be the boasted peculiarity of our free institutions, that all alike—the rich and the poor—may find an open door to the Temple of Fame and the magazines of wealth. This *is* unquestionably so in a qualified sense.

Among the members of our own profession we know of none more deserving of a niche in our Portrait Gallery than Mr. James Brewster, of New Haven, Conn., not merely because he is one of the oldest living members of our fraternity, and has been one of its most successful business men, but because he has always shown a peculiar interest for the welfare of all with whom business has brought him in connection; but more of this hereafter.

JAMES BREWSTER, whose portrait we present to our readers in the present number, is the second of eight children, five of whom are still living, and is a lineal descendant from Elder William Brewster, a portion of whose family, history informs us, came over from Europe in the Mayflower, with the first installment of the Pilgrims, and who landed in Plymouth Harbor on that cold and eventful morning of November 22nd, 1620. In reference to these Pilgrims and their immediate ancestors, it has been quaintly said by one of their distinguished descendants—the Rev. Henry Ward Beecher—that "under Divine Providence, there had been (in England and Holland) a trunk growing, a leaf growing, a bud growing, and, by-and-by, when God said, 'Blossom!' the Puritans came (to our shores), and they were the blossom of ages!" Of their distinguished Chief, Elder Brewster, it is said, that once, when on a mission as secretary to Davidson, an English ambassador to Holland from Queen Elizabeth, "he slept one night with the keys of Flushing under his pillow." Among the descendants of this old Puritanic stock, then, is included our venerable and worthy fellow-craftsman.

The subject of this sketch was born at Preston, Connecticut, Aug. 6th, 1788, and is consequently now nearly seventy years of age, and some years retired from the more active pursuits of his former business—although as a silent partner, we understand, he is still connected with a large coach-making establishment in New Haven; and, amid the abundant fruits of a life of honorable enterprise, and in the enjoyment of all his faculties unimpaired by age, he spends his time in devising modes of usefulness to his fellow-men, especially young men. Educated at the common school of his native place, and early taught the rigid principles of morality characteristic of the earlier settlers of New England, and, although, to use his own language, "feeble in early life, encountering in his minority as many trials as any who heard him—fatherless and with but little outward assistance—and laboring constantly for half a century, yet his natural force is not materially lessened," and he attributes it as "all owing to temperance, and practicing upon that trite saying: *'Habits, good or bad, are powerful things.'*"*

In the year 1804, being then in the sixteenth year of his age, Mr. Brewster was apprenticed to Col. Charles Chapman, of Northampton, Mass., to learn the "art, mystery, and trade" of carriage-making. In this same shop, we believe, Messrs. James Goold, now of Albany, and Jason Clapp, of Pittsfield, Mass., both served their apprenticeships, whose portraits we hope to be able to present in our Gallery at a future day. At the expiration of Mr. Brewster's apprenticeship—to his honor be it said—he received a diploma from

* Address to the Young Men of New Haven, delivered in Brewster's Hall, Jan. 29, 1857, p. 14.

First Page of Journal with Which The Hub was Merged.

The Hub's Early History.

Now let us turn to The Hub proper. Early in 1869, Geo. F. Swain, an employe of Valentine & Co., 32 Kilby street, Boston, issued a most remarkable sheet entitled Valentine's Advertiser. It was issued during the absence of Lawson Valentine and immediately on his return he ordered every copy burned. Perhaps there may still be a copy in existence, but it is doubtful.

After the bonfire, Lawson Valentine told George Houghton to try his hand at editing a paper in the interest of Valentine's varnishes and particularly of permanent wood filling, which was just being placed on the market. Perhaps no one was more capable of accomplishing this task than was Geo. W. W. Houghton, recently graduated from the Cambridge High School and with natural literary talent.

The Hub was the title of the paper which George Houghton issued in April, 1869, it being published at the Riverside Press in Cambridge. It was in newspaper form, clean, bright and readable. The title was borrowed from Oliver Wendell Holmes' allusion to the State House in Boston being the "hub of the universe." This and the fact that the hub is a very important part of the vehicle decided the name.

Moved to New York.

In 1870 Valentine & Co. moved to New York and The Hub came along. Its form was changed to that of the Aldine, a literary magazine which had just been started; even the style of type used for the title was copied. The Coach Makers' Magazine was purchased and merged with The Hub, which retained both titles for a year or two, and then dropped the magazine part.

It might be well to mention that for some years after disposing of his publication, Ezra N. Stratton resided on Lexington avenue in New York, and conducted a coal business, which he had previously maintained in conjunction with the magazine. He died in November, 1883. Cyrus W. Saladee died a dozen years ago, the latter part of his life being spent in improving other men's patents and selling his patents on royalty.

The first New York office of The Hub was at 88 Chambers street and it branched out as a full-fledged trade journal. Clemens Peterson, who had recently come to this country from Denmark, was made assistant editor. George Meyer was advertising solicitor. He was soon succeeded by H. E. W. Campbell, who became manager. He was succeeded by a man named Dalzell, who continued only for a short time.

About that time The Hub moved to 323 Pearl street, and Hadwin Houghton, a brother of George, purchased Lawson Valentine's stock and became treasurer and manager. In 1879 Hadwin Houghton went to Paris to open a branch house for Valentine & Company, and as he was to be absent a number of years, he sold his stock back to Mr. Valentine.

Wm. R. Beckwith, a young man in Valentine's office, was then placed in charge as manager, and filled the position for several years, finally resigning to enter other business.

Chas. B. Sherron, who had represented the Carriage Monthly for many years, having started as office boy and become traveler, entered the employ of The Hub in September, 1876. He succeeded a Mr. Van Siclen as traveling representative and on Mr. Beckwith's retirement was made manager. But the love of the road was too strong and in a short time he resumed his former position and was succeeded by Maximilian Yaegerhuber. Then J. Howard Barnard became manager. He quit and was succeeded for a short time only by a Mr. Wells.

After Wells came J. H. Eggers, who had grown up in the business, having come to The Hub office when a lad, and later became book-keeper. Mr. Eggers was manager for a number of years, finally leaving to enter another publishing business in New York, where he is still prospering.

C. B. Sherron, in the meantime, had left The Hub, but after six years of absence returned for three or four years, while Eggers was manager and George Houghton still editing the publication. The territory was then divided, C. B. Sherron taking Pennsylvania and all west and south of that State, while

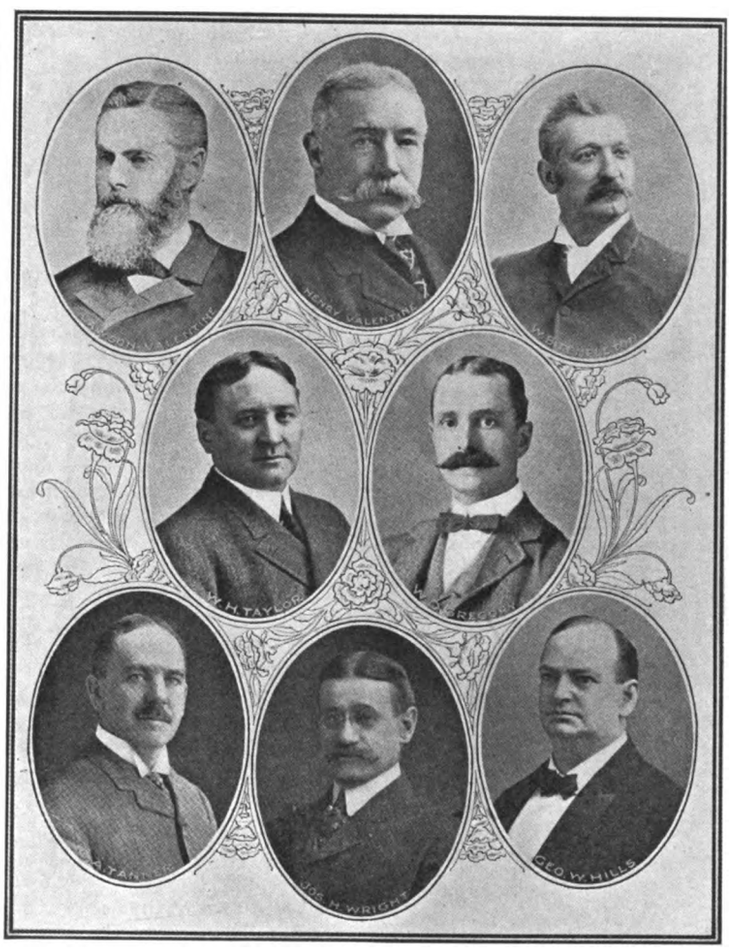
Digitized by Google

Alfred E. Chirm had New York State and New England. Chirm was an Englishman, a Birmingham boy, and as noble, honest and conscientious a man as we have ever known. After leaving The Hub he entered the employ of a big English varnish house, representing them in the United States and Canada and also visiting South Africa in their interest. He is now with some financial institution in New York, but makes his home in New Haven.

But we must go back a few years to 1880, introducing Chas. H. E. Redding, who succeeded Sherron when he left the first time. Redding served The Hub faithfully and well for a period of four or five years, resigning to start a paper of his own, which was devoted to the harness industry. This paper ultimately became known as Harness and is now owned by the publishers of The Hub. While not actively interested in the carriage trade, Redding attends all the conventions of the C. B. N. A., having charge of the annual exhibit.

While The Hub has had quite a number of managers and traveling representatives during its fifty years of existence, it has had few owners, editors and draftsmen. As previously stated, Geo. W. W. Houghton was its first editor after the amalgamation of the two papers and Adolphus Muller was its draftsman. They had the assistance of such men as John D. Gribbon, foreman of Brewster's body room and Henry F. Porter, who had been a Philadelphian, but had gone to South Bend to take charge of Studebaker's carriage department when that big wagon company entered the carriage field. Porter has been dead these many years.

When the Carriage Builders' Technical School was started, John D. Gribbon was selected as instructor, a position which he filled acceptably to everybody until his death. Everybody who knew John D. Gribbon knew an honest, faithful, unassuming and lovable man.



Founders and Succeeding Owners of The Hub.

J. L. H. Mosier was another man who helped build up The Hub with his pencil. Mosier was foreman smith at the Brewster factory and not only an excellent workman, but knew how to teach others. The smith department of The Hub was not excelled by any department. Mosier is still living, a hale and hearty old man, in the upper portion of New York City and occasionally contributes an article to the trade press.

Nor must we forget Howard M. Du Bois, who had charge of the wheel department of The Hub. Outside of the Forestry Service at Washington, we doubt if any man ever studied timber as Howard Du Bois did. He had specimens which grew on high ground and low ground; specimens which were cut at different seasons of the year; air dried and kiln dried. He tested these woods in every way and examined them all under the microscope. Then he wrote about them for The Hub in a way that was far from tedious reading. He became known as the authority on wheel timber. He is still living and holding down a good position at Wyandotte, Mich. In the paint department, Mr. Houghton had the valuable assistance of Capt. O'Donnell, foreman painter with R. M. Stivers, and F. B. Gardner, who had been a painter at Brewster's. These were the most prominent on the regular staff of The Hub, though there were scores of occasional contributors whose names have escaped us.

In 1873, and for a number of years before and after that period, the subscription price of The Hub was $5.00 a year and it was cheerfully paid, too. In 1873, George Houghton went to Europe, accompanied by Adolphus Muller. They visited the London and Vienna Expositions, making drawings of all the best vehicles and gleaning much valuable information for their readers on this side of the water.

Then George went to Paris and enrolled himself as a pupil in Albert Dupont's School for carriage drafting. He mastered the French Rule and was able, on his return, to write many valuable articles on carriage drafting. Then, too, because of this attendance at Dupont's School, he was instrumental in having the Carriage Builders' Technical School founded in New York, a school started by the Carriage Builders' National Association and continued under their auspices ever since.

Houghton remained with The Hub until 1889, when he left to become editor of Varnish—now the American Vehicle—but after fifteen months returned to the editorial chair of The Hub. During his absence, Fred Kinsman, now editor of the Carriage Dealers' Journal, assumed editorial charge. A few months after his return he was stricken with disease and on April 1, 1891, in his forty-first year, he passed away, mourned by all who had ever known him. His cordial greetings, his winning smile and his charming personality made many friends for the paper with which he was so long connected. For twenty-two years he had been a potent force in the carriage trade of America.

A month later, on May 5th, Lawson Valentine, the first owner of The Hub, and brother-in-law of Mr. Houghton, passed away at his beautiful country seat, Houghton Farm, in Orange County, N. Y.

It was at this period that Wm. N. FitzGerald was called upon to take editorial charge of The Hub, which he held until June 1904, when he died. Mr. FitzGerald was peculiarly fitted to fill the position of editor for a carriage trade journal, being a practical body-maker and having formerly edited a vehicle publication of his own. He was also author of several books of practical value to mechanics of the carriage and harness trades.

Adolphus Muller died in 1882 and soon thereafter was succeeded by Albert Kehrl, as drafstman. Kehrl had been foreman body-maker with Henry O'Connell, Baltimore, and had won the gold medal offered by the C. B. N. A. for the best carriage draft. This brought him to the attention of New York parties and he was offered inducements to enter the employ of the H. H.

Digitized by Google

Babcock Buggy Co. From there he went to The Hub, where he remained until carried off by consumption in 1887.

During the last year or two of his service he had an assistant, Gustave Welsch, who succeeded to the position of draftsman on the death of Mr. Kehrl. Welsch died in 1893 and was succeeded by Jacob H. Klein, who now holds the position. It will be seen that since 1870 The Hub has had but four draftsmen, three of whom died in harness, while Mr. Klein is a young man, with prospects of many years of service.

Late History.

In the matter of managers, there have been but few changes in later years. After John H. Eggers passed out, W. B. Templeton became manager, who soon after engaged Vernon Comstock and his brother, Herbert Comstock, as traveling representatives. Templeton had had years of experience in the varnish business, having been identified with several varnish concerns and one of the founders of the present Hildreth Varnish Company, and also secretary and general manager of the Oil, Paint and Drug Reporter.



Geo. W. W. Houghton.

During his administration, he established The Hub News, weekly, which was a small periodical about the size of Printers' Ink. The Hub News later was incorporated with The Hub. Mr. Templeton is now secretary of the Paint, Oil and Varnish Club, of New York, a position which he has occupied for over twenty-one years.

Herbert Comstock is selling automobile specialities and is prospering. Vernon Comstock died several years ago while in the service of Palm Bros., manufacturers of transfer ornaments.

The Hub then became the property of Taylor & Gregory, who were very successful with it in a financial way. After some years they sold it to the present owners. Taylor subsequently purchased "The Engineer" a western publication, which he afterwards sold to the Hill Publishing Co., and is now identified with the latter organization as general manager.



Wm. N. FitzGerald.

Walter Gregory purchased the "Four Track News" and converted it into "Travel Magazine," a most entertaining publication.

Among those who have represented The Hub in more recent years we might mention John C. Graham, who died in 1901; Edward R. Shaw is one of the owners of "Practical Engineer," of Chicago, and is doing well; E. B. Coggeshall moved to Denver several years ago on account of his health; G. D. Lounsbery is with the Carriage Dealers' Journal; J. H. Klune is still with the publication and is known to most of its advertising patrons; B. H. Hull is the present western representative.

We have briefly mentioned all those who have, in any way, aided in making The Hub a success, each in his own sphere of activity. Except where we have mentioned their decease, all are living and in active business. Hadwin Houghton, who was mentioned as one of the early managers, is now superintendent of Valentine & Company's varnish factory in Brooklyn.

The history of The Hub is the history of carriage building in the United States during the past half-century. It has chronicled the deaths of those who have passed away; it has mentioned the new concerns which started as well as those which fell by the wayside. It has not only been instrumental in doing good but has pointed out and helped to abolish many trade abuses.

It was on the call of The Hub that the first small contingent of carriage builders assembled in the St. Nicholas Hotel thirty-six years ago and formed the Carriage Builders National Association, now one of the largest trade organizations in the world.



Jacob H. Klein.

It was through the efforts of The Hub and its popular editor that the Carriage Builders' Technical School was started. It has numbered among its contributors the brightest men in the trade, both in America and Europe.

To-day The Hub stands for the highest ideals in trade journalism, just as it has always done, and though it has now a half-dozen competitors, it holds the esteem of them all, because of its fairness.

LEADING NATIONS IMPORT MUCH LUMBER.

Few people have the slightest conception just how important a part timber and unmanufactured wood play in the trade between the world's great nations, and doubtless it is news to many to learn that the lumber importations of the various countries amount to $285,600,000. This is according to estimates for the whole world compiled by Dr. Earnest Friedrich, of the German commercial high school at Leipzig.

Notwithstanding the fact that it finds its own supply dwindling, the United States furnishes about 20 per cent. of the lumber imported by other countries. Austria-Hungary furnishes 19 per cent., Russia 16 per cent., Canada 13 per cent., Sweden 18 per cent., Finland 10 per cent., and Norway and Roumania a small quantity.

The countries importing wood are those on the highest economical plane, which were themselves in earlier times densely wooded, but whose forests have been denuded to a greater or less extent to make room for agriculture and other industries, says Vice-Consul James L. A. Burrell, of Magdeburg, in a report to this government. Only 4 per cent. of the territory of Great Britain is covered with forests, and during the year 1906 that country imported lumber to the value of $135,561,750. Germany has still 26 per cent. of its territory covered by forests, but imported in 1906 lumber valued at $61,285,000. Belgium and the Netherlands, that have but 8 per cent. forest lands, Denmark, that has 7 per cent, France and Switzerland, with a small percentage, are compelled to import lumber.

Besides these countries, those lands lying on the dry western side of the sub-tropical zone lacking forests are forced to import wood. Egypt imports wood and coal to the value of about $16,660,000 annually; Algeria, Tunis, Spain and Portugal with only 3 per cent. forest land, Italy and Greece with only 9 per cent. of forest land, the eastern part of Asia, British South Africa, the western part of Chile and Peru, the Argentine Republic, and Australia, all poor in wood, are dependent upon import.

WORK HORSE PARADE FOR MILWAUKEE.

The city of Milwaukee, Wis., is making active preparations for holding a work horse parade, and has fixed on Thursday, October 29, as the date. The Wisconsin Humane Society, with the assistance and support of the local Team Owners' Association, will probably manage the affair.

Digitized by Google

Pioneers of the Carriage Trade

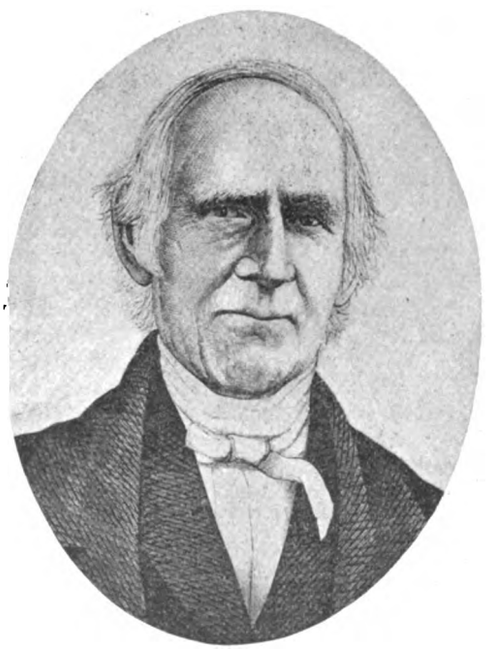
Short Biographies of the Early Builders

WITH especial pride we honor those men who were pioneers in the art of coach building by presenting to our readers their portraits, with a biographical sketch of each. It may be truly said that they are the fathers of the trade, having been the first to enter into the building of carriages in this country, to any large extent, after the birth of the nation, prior to which time all high class work was imported. One feature which impresses one forcibly and demonstrates to us the stability upon which their business was founded, is the fact that the decendents of four of these pioneers are still conducting business and are among the most reputable and high class builders of to-day.

Robert R. Campfield.

Robert B. Campfield, pioneer American carriage builder, was born near Newark, N. J., February 15, 1770 and lived beyond the nineties. In his youth he was apprenticed to David Grummon. An incident occurred during his apprenticeship which had much to do with his later successes. The owner of an imported carriage stopped with it for two or three days at the town tavern. Young Campfield espied it, saw its beauties and spent his noontimes and evenings carefully inspecting it and making such drawings of parts as he knew how. He noticed the carvings especially.

From the very start of his apprenticeship his mind was full of ideals as to carriages and what they should and could be. He was perhaps the first to manufacture carriage accessories and conceived the idea of first constructing separate parts. When



Robert R. Campfield.

he later applied to a New York coach maker to furnish him carriage parts he met with a rebuff. Builders then thought none but an English mechanic could do the fine work of a carriage. When, however, the parts were made and delivered the work was done so well that he received an unlimited order, on the spot, to make all he could deliver. The English mechanics looked with jealousy on the young American "wagon maker" as they called him.

It was in the year 1800 that he established a carriage factory where all the parts of a carriage were made under one roof. From that time and place his business grew rapidly and his carriages became known all along the Atlantic Coast. New



James Brewster.

Yorkers were proud to own a Newark carriage. He did much to modify the old and cumbrous English type and was perhaps the first builder to start carriage building on its way towards lightness and lower suspension. He had his own ideas about suspension and introduced new methods and novelties which later became standard methods. His efforts were directed towards simplification of work and to a co-operation of one department with another.

Without knowing it he laid a good part of the broad foundation on which later custom work rested until swept aside by the demon of machinery. He was a natural designer and turned his conceptions into grand and beautiful realities.

James Brewster.

It is hardly necessary to apologize for presenting a brief biography of some of the early pioneers and leaders in the carriage industry in an anniversary number. Even to the average well informed carriage builders the names of these pioneers are but little more than names. As time passes they assume a higher place in the industry not only for what they did as individuals in laying the foundations of the industry but in relation to those who followed them. The pioneers were men of high ideals. In these later days there have been builders who have built more carriages, but how much better?

The name which stands foremost in the rank of early American carriage builders is James Brewster. The first Brewster of which history makes out, arrived in the Mayflower on Nov. 22, 1620. The subject of this sketch was born at Preston.

Digitized by Google

Connecticut, Aug. 6, 1788. When he was sixteen years old he was apprenticed to Col. Charles Chapman of Northampton, Mass., a revolutionary officer who had entered upon the building of carriages. Among his apprentice associates was James Goold, later of Albany. These two boys were of like inclination, honest in their desire to learn their chosen trade thoroughly and determined as boys could be to win.

After the long apprentice period then prevailing he graduated as a journeyman and it was in September, 1809, that he decided to go to the city of New York and begin business. The stage in which he road passed through the city of New Haven and while there he roamed around the town. In passing through Orange street he found a carriage shop where a journeyman was wanted. The thought seized him to take the job and he did and in that city he remained over forty-six years.

But little is known of his early shop struggles, but success was his for the very next year he began business for himself. His work soon attracted attention from other localities. It became sought for. Brewster carriages soon had a name. Branches for their sale were established in other cities. He bought out the repository of the old carriage manufacturer, Abram Quick, Broad street, New York and soon after associated with him John R. Lawrence, when the old Broadway house was established which in after years became famous. He built up a valuable trade in Cuba, especially with the volante which became popular with Cuban ladies.

His establishment grew year by year and Brewster carriages grew in beauty, style and attractiveness. He instructed his workmen in the art of construction and instilled in them a spirit of pride which was stamped on their work. After two or three removals he built a permanent factory in what was then a suburb of New Haven. The thought ever prevailing in the Brewster shop was beauty with excellence of construction.



Jason Clapp.

There was then no machine and tools to whisk out "parts." No supply of accessories to throw together and call it a carriage. Everything from start to finish was hand-work and every piece of timber used passed the inspection of men whose eye and sense of touch told them what they were handling. James Brewster was a scholar. He was well read in the literature of the day. He saw future possibilities of the industry and took a pride in laying his share of the foundation.

Jason Clapp.

Jason Clapp, another pioneer in carriage building, was born at Northampton, Mass., in 1782. At the age of seventeen he was apprenticed to James Dunham of Pittsfield, Mass., wages, eight dollars a year and board. At the conclusion of his apprenticeship he was to receive $60. After completing a four years' service he was offered the foremanship of the carriage establishment of Lemuel Pomeroy, of Pittsfield, which he accepted and remained there for six years. In 1810 he established his own carriage shop in that place. Mr. Clapp first gave his



James Goold.

attention to the building of chaises, then known as Boston chaises, which were much used in those days. Later he introduced phaetons and "ribbed" wagons.

The apprentice system was then in its prime. Boys of an industrious and ambitious turn of mind sought employment in shops. At one time and for a long time three hundred apprentices were employed and about fifty skilled mechanics. The distinguishing feature of Jason Clapp's work, as well as the work of all pioneer builders, was the highest possible excellence. Mr. Eaton, of Eaton & Gilbert—coach and car builders of long ago—said the oldest man has never known a wheel made by Jason Clapp to wear out. Without talk or boasting this famous builder toiled on year after year, never losing sight of his ideal standard of excellence. His work found its way far from New England. When the friends of President Pierce presented him with a carriage it was taken out of Jason Clapp's factory. His work reached far distant states, wherever rail and water transportation could carry them. They served as samples for younger builders who esteemed it a privilege to copy this great designer. In the capitals of Europe his vehicles were seen and royalty favored his workmanship frequently, in preference to the best work of their home builders. From his factory went forth journeymen who in turn established carriage factories or who became foremen or superintendents for others.

Jason Clapp has left his name indelibly stamped upon the industry. He established high standards. His shop methods as to inspection and construction could be safely followed today. He was withal a genial and liberal man, kind to his apprentices and interested in their welfare.

James Goold.

James Goold at the age of fifteen years apprenticed himself to Col. Charles Chapman of Northampton, Mass., to learn the woodwork branch of the industry. The failure of his employer

Digitized by Google

made it necessary for him to go elsewhere and he sought Jason Clapp with whom he remained until 1813. After a time he settled in Albany, N. Y., starting in a small way. In 1823 he erected a large factory, large for those days, which was burned in 1838 but soon after rebuilt. He lived until 1879 when he was ninety years of age.

In addition to carriages he established a large business in sleighs and hearses and introduced the full glass panel. His carriage work was like the work of all the pioneers, ideal in excellence of construction, and, like all his contemporaries, his work was called for far and near. Albany carriages enjoyed a national reputation. The idea of highest excellence combined with artistic beauty and endurance ran through all the work of the early builders.

Peter Kimball.

The name of Peter Kimball is closely associated with early American carriage building. Though considerably removed from large centers of population he stamped his individuality upon the industry. He was born in Bradford, Mass., May 19, 1793, and died in Norway, Maine, in 1871, leaving six sons, all of whom followed their father's footsteps, and four daughters. C. F. Kimball, of Chicago, grandson, is at present the only survivor.

The characteristic feature of the early Kimball carriages were their superb mechanical construction. Peter Kimball, without the assistance of associations or models, or the impulse of stimulating example, conceived an American carriage and proceeded



Peter Kimball.

to execute his thought in work. Against many advised conditions he built up a great trade. Sleighs came to form an important feature of his business and his work attained a wide and life-long sustained celebrity.

Lewis Downing.

Lewis Downing, Sr., is another pioneer who began the building of vehicles in a small way and after many years of vicissitude established a business which grew to large proportions and became so firm that its foundations are unaffected by the ravages of time. This house, like the other old ones, which are still among us, aimed to do the best work, to which was due its success.

Mr. Downing was born in Lexington, Mass., June 23, 1792, and learned his trade with his elder brother, who had succeeded his father in the carriage business at Lexington. He moved to Concord, N. H., in May, 1813, and on August 2 of that year announced in the New Hampshire "Patriot" the establishment of a "wheelright" business and solicited the patronage of the public. Thus began the career of the well-known house of the Abbot-Downing Company.

Two years later he prospered sufficiently to purchase the property upon which the present large plant is located. He



Lewis Downing.

began the building of coaches in 1826. In 1828 he took into partnership his employe for two years, J. Stephen Abbot, when the firm name was changed to Downing & Abbot, which continued as such until 1847 when it was dissolved by mutual consent and Mr. Abbot continued at the old stand. Mr. Downing removed to another shop and took in partnership with him his two sons, who with their father conducted the buisness very successfully and during the period between 1850 and 1865 employed from 80 to a hundred men.

In January, 1865, Lewis Downing, Sr., retired from an active business life of nearly fifty-two years. He died at Concord, N. H., in 1873.

Upon the death of J. Stephen Abbot, in 1871, the two firms were reunited by the sons, forming the present corporation of Abbot-Downing Co.

SCARCITY OF TIMBER CAUSES USE OF HICKORY STUMPS.

A St. Louis wheel manufacturer is buying up hickory stumps and paying good prices for them as they stand. He has discovered that wheels whose rims are made of small pieces bound together by iron clamps which serve also as sockets for the spokes do not shrink and rattle when they become dry, as do rims which are made of long hickory, a product that is becoming more expensive every year. The rapidity with which wood of all kinds is advancing in price is causing manufacturers to utilize what in former years was considered refuse. Thousands of black walnut stumps have been turned to good account, and now the hickory stump is to be lifted from the ground with the larger roots, as a thing worthy the expenditure of the necessary time and money.

Digitized by Google



BOOKBINDING.

The subscriber contemplates getting up an original design for a cover for the Coach-Maker's Magazine, at the end of the year the subscribers to the Magazine have their volumes bound in the most elegant and appropriate style, at a rate at least fifty per cent. below that usually charged for work of that description.

Subscribers at a distance, who cannot send their volumes to this city to have them bound, can have the covers sent to them by mail, by sending their orders to the office of the Magazine.

E. STOCKING,
General Bookbinder, 14 Frankfort-st., N. Y.

D. W. THOMAS,
99 Thompson St., (Office, 13 Ann St.) New York,
MANUFACTURER OF
CARRIAGE NAME PLATES.

Every kind of Name Plate made in a superior manner, at reduced prices. ☞ All orders executed with promptness and dispatch.

PERSONS WHO WANT THE
GUARD WHEEL MACHINE
can order through the Publisher of this Magazine, who will see that they have one got up perfect, and at the Patentee's prices. I naturally believe that, in a factory where much work is done, it can be made to pay for itself in one year's use.

CARRIAGE WOOD WORK,
MANUFACTURED BY
DANN, BROTHERS,
117 State St., New Haven & Court St., Fair Haven, CONN.

Carriage parts, plain, 2 pieces to set, 1 00 to 20 00
" carved, 1 piece to set, 1 00 to 10 00
Spring Bars, plain, per dozen, 1 50 to 3 00
" carved, " 2 00 to 4 00
Couch and Buggy Poles, " 12 00 to 25 00
Shafts, per extra pair, " 6 00 to 12 00
Buggy Bodies, without Seats, " 8 00 to 20 00
Buggy Seats, per dozen, " 20 00 to 40 00
Whole Best Bolts, best, per dozen, " 2 00 to 4 00
" Large, " 75 to 1 00
Coach and Buggy Whippletrees, pr doz. 1 00 to 2 00

Best Circular Seat Backs, Bows, rounded or left square, Seat Spindles, Opera Boards, Skeleton-parts, &c., &c., on hand and made to order.

WARRANTED WHEELS!
G. F. KIMBALL,
Manufacturer of every description of warranted
CARRIAGE WHEELS,
from the lightest Baby-Wagon up to the finest Trotting Buggy and Coach; also DEALER IN SPOKES, Spoken, Gum Hubs and Eastern Hickory Rims, suitable for fine Varnished Wheels.
Carriage Building, State-st., cor. Grove,
July, 1858. *New Haven, Conn.*
REFERENCES.—Sargent, Gunnison & Co., Boston, Mass. G. & D. Cook & Co., New Haven, Conn. J. R. Brewster, New York. Denman & Co., New Orleans. Dyr & Foster, Boston, agents for the East.

CARRIAGE HARDWARE
AND
TRIMMINGS.
CORNELIUS VAN HORN,
70 BEEKMAN STREET,
New York,
IMPORTER OF AND DEALER IN

Springs, Axles, Clamps, Hubs, Spokes, Felloes, Shafts, Poles, Bent Rims, Bent Poles, Bent Shafts, Bent Seat Rails, Curved Dasher Parts, Seat Spindles, Bows, Lamps, Lamp Trimmings, Axle Caps, Oil Cups, Linch Pins, Screws, Nuts, Washers, Bolts, Rivets, Iron Wrought Ash Slips, Buggy Dashes, Bent Rims, Bent Poles, Bent Shafts, Bent Seat Rails, Curved Dasher Parts, Seat Spindles, Bows, Lamps, Lamp Trimmings, Axle Caps, Oil Cups, Linch Pins, Screws, Nuts, Washers, Bolts, Rivets, Iron

Duke's Hub Boring Machine, Enamel Leather, Patent Leather, Enameled Cloth, Oil Cloth, Velvet Carpet, Brussels Carpet, Linen Drill, Fringes, Curtain Frames, Spring Barrels, Tacks, Buttons, Screw Plates, Hame Tugs, Trace Chains, English Varnish, American Varnishes, Saunders' Patent Skirt Irons,

and all other articles used in the manufacturing of Carriages and Sleighs.

C. V. H. would respectfully inform Carriage Makers, that he keeps a well-assorted stock of Goods, and by the best class of Carriage Makers, and at the lowest market prices, for CASH, or approved notes.

CASH buyers will find it to their advantage to call and examine my stock before making their purchases.

Fig 1

G. L. HAUSSKNECHT'S
UNRIVALED PATENT
CARRIAGE COUPLING

The merits and advantages are described in No. 1, Vol. 1. The right for the use of the invention is now offered for sale. Parties having used my invention, whether under "Everetts' Patent," or with "Hubbard or Murgatroyd" Springs, are requested to make amicable arrangements. The validity of the patent is established by a decision at Court, in which the defendants claimed to have purchased an interest in "Everetts' Patent, copied from

New Orleans Commercial Bulletin, March 5th, 1858.
Curtis Strype, Circuit Court.—The suit of N. T. Edson vs. J. M. Denman, *et als.*, has been decided in this Court. The plaintiff applied for an injunction to restrain the defendants from using an improvement of running gear of carriages, invented by GUSTAVE HAUSSKNECHT, of Connecticut, and the use of which, in New Orleans, the Patentee sold to plaintiff as he alleged. The Judge granted the injunction, and authorized J. W. Gurley, as special master, to ascertain the number of carriages and other vehicles manufactured and sold by defendants.

Responsible agents wanted in every town or county, to collect for infringements on said letters patent, for making, using, or selling to others to be used. Apply to

G. L. HAUSSKNECHT, New York City.
Formerly New Haven, Conn.

JOHN A. GARDNER,
Silver Plater,
Rear of 91 GRAND STREET, near the Bowery,

Manufacturer of and dealer in Trimmings constantly on hand, all Kinds of plated Carriage Hardware and Trimmings, Saddle and Harness Mounts will also find a full assortment. Sheet of Tyrone, Iron, &c., of the latest styles.

☞ Dashes, Axle-nuts, and other Jobs left at this shop will be placed expeditiously, neatly, and on very reasonable terms. Please give me a call.

JAMES M. POST,
HARRISON, Westchester Co., N. Y.,
MANUFACTURER OF
Patent and Common Carriage
AXLES,
Rear of 11 Fair Street,
NEWARK, N. J.,
Also dealer in
SPOKES, SPRINGS AND CARRIAGE HARDWARE.

☞ Those who have so long and deservedly admired the Axles manufactured by the former firm of HARTMAN & JAMES, will, I trust, find my work entitling all the good qualities of those made by the same.

Who Re-cruits your Files!
J. F. ANDERSON,
HAVERSTRAW, Rockland Co., N. Y.,

Who has re-cut old Files for several manufacturers in N. Y. city, respectfully begs to say that he has had his order cast him by mail or left with the proprietor of this Magazine, will be attended to, put files in good order, and promptly returned to your place of business.

CHARLES C. DUSENBURY,
DEALER IN EVERY DESCRIPTION OF
COACH AND CARRIAGE
HARDWARE & TRIMMINGS,
No. 101 Bowery, Corner Broome St., N. Y.

Carriage and Wagon Manufacturers, will find at this house all the materials they may require in their line of business, at the lowest prices, and on accommodating terms, such as Axles, Springs, Bolts, Nuts, Screws, Polishing, Oils, and Varnish, all kinds of Patent Leathers, Clothes, Damasks, Silks, Carpets, Trimmings, Tassels, Cords, Fringes, Curtain, Tufts, Tapes, &c. These goods are selected with care, and with the express aim of giving satisfaction to the public. *Silver and Brass Plating done.*

☞ Orders through the mail, when accompanied with the cash, or satisfactory references, will receive immediate attention.

CARRIAGE TRIMMINGS.
JOHN P. JUBE & CO.,
83 Bowery, New York,
Keep constantly on hand a large assortment of choice
Saddlery and Coach Hardware,
Together with a well selected stock of the most approved manufactures' Patent Leather, Japanned Curtain Cloth, warranted Steel Springs, Patent, Half Patent and Plain Axles, Boxes of superior quality, Hubs, Spokes, Best Hubs, Shafts, Poles & Tap Bows, Coach Varnish and Japan, Curled Hair, Moss, &c.

HAYDEN & LEICHWORTH,
AUBURN, N. Y.,
MANUFACTURERS OF
Coach Laces, Carriage Trimmings,
BENT SHAFTS, POLES AND BOWS,
OF SUPERIOR QUALITY.

Patent and Enameled Leathers and Cloths, of the best make and finish; also, Axles, Bands, Philadelphia Bolts, with every variety of Carriage and Saddlery Hardware and Trimmings, all of which we offer to Carriage-Makers at the Lowest Market Prices.



W. H. SAUNDERS,
HASTINGS, on the Hudson River, Westchester County, New York,
IS THE SOLE MANUFACTURER OF THE FOLLOWING
STEEL CONVERTED AXLES, &C., VIZ.:
SAUNDERS' PATENT TAPER AXLES—Universally approved—as is shown by extensive piracies of this article by common Axle Makers.
Saunders' Patent Short Bolt Mail Axles.
¾ Inch Patent Steel Axles, for the lightest class of racing and trotting wagons, having No 9 or 3 inch Hubs. The Steel of which these Axles are made is manufactured and patented at Sheffield, in England, expressly for W. H. Saunders' use, and imported by him. It is warranted Tractive as Copper, and stiff as the hardest Steel." These are the best and most beautiful Axles of their class.

Miner, Stevens & Saunders' Patent Shaft and Pole Couplings, of two sizes. It is admitted by all who have used these articles, that they are the best Shaft and Pole Connections ever devised—no other can bear a comparison with them. Please refer to any respectable Carriage-Maker in New York, &c. The demand is large and rapidly increasing.
Saunders' Patent Brass Lined Axle-Boxes, fitted to Axles of all sizes.
Saunders' New Patent Steel Boxes, for Axles. These are perfect; they are truly cylindrical; the interiors or bearings are polished like Mirrors; the Axles for them are finely filed; the running is perfectly smooth and still; their duration is indefinite; and the price but a small advance on that of common Soft Boxes.
W. H. SAUNDERS is the ONLY AUTHORIZED AGENT FOR THE SALE TO CARRIAGE-MAKERS OF Messrs. SHORTRIDGE, HOWELL & JESSOP'S PATENT TIRE STEEL, for Roding and Tyreing Wagons. This material possesses extraordinary properties; it combines remarkable tenacity and flexibility, with great stiffness, whereby it strongly braces the wheels, and causes them to retain their shape under hard work; in fact, it forms the best and most durable Tyre yet produced for light Wagons. The sizes are: 1 x ⅛, and 1 x ¼ inch. The Bavarre of the proper temper for front and back wheels. As this Steel is sold at the lowest price for which it can be imported, the smallest order that can be accepted is for a single bundle, of about 140 lbs.
W. H. SAUNDERS also manufactures, in superior style, and of the best proportions, as calculated by himself
Every variety of Steel Converted Axles, viz.:
IMPROVED MAIL AXLES, with long Bolts, Warranted.
HALF PATENT AXLES, with Coulcher's Collars, or with Mail Collars.
ALL KINDS OF TAPER AXLES, &c.
These Axles are made of the highest qualities of material, with corresponding workmanship. They have either beautiful Gold Color Composition Nuts, or bright Iron Nuts, either square of six-sided, all of superior patterns.
All Axles manufactured by W. Saunders have their Leather Washers protected, by the insertion, in each, of six hard wood Pegs.
☞ Letter Orders, with references, promptly attended to.

G. ROWDEN,
MANUFACTURER OF
FRINGE, CORD & TASSELS,
No. 294 Mulberry Street,
NEWARK, N. J.

Carriage Tassels, every variety, Cord and Tassels, for Footman Holders, Spring Curtain Tassels, Hearse the very best and selected lumber. Orders by mail Trimmings, Hearse Fly Nets, Speaking Trumpets, supplied to Manufacturers and Dealers, reasonable. Mother Tufts, Inside Tassels, Acorn Trigger, Curtain, at short notice. Braids, Curtain Fringe, Glass Strings, Netting Cord, Gimp, Bail Tufts, Webbings, Rosettes, Frogs, &c., &c. of the Magazine.

C. D. INGHAM,
MANUFACTURER OF
CARRIAGE HUBS
Chittenango, Madison Co., N. Y.

A general assortment always on hand, turned from ☞ Reference in New York City, to the Publisher

DOLE, SILVER & FELCH,
SALEM, OHIO,
SOLE PROPRIETORS AND ONLY MANUFACTURERS OF
Dole's Self-Centering
HUB-BORING MACHINE,
PATENTED JULY 22nd, 1856.

PRICES:
Machines with capacity to work on Hubs varying from 1⅞ to 3¼ in. in diameter at the end $15
Same sized Machine furnished with a large set of jaws extra, with capacity to work on Hubs varying from 1⅞ to 14 inches in diameter 18
Extra large Machine, with double jaws, for heavy work, capable of being varied from 3⅛ to 15 inches 20
☞ Orders filled without delay, and Machines sent to any part of the United States or Canada by Express or otherwise, as directed.

LEVI A. DOLE. ALBERT S. SILVER. ALLEN S. FELCH.

JOHN H. TUTTLE
MANUFACTURER OF AXLES,
223 N. J. Railroad Avenue,
Corner Oliver Street,
Near Chestnut St. Depot, Newark, N. J.

BIGELOW'S
COACH VARNISH
MANUFACTORY.

The undersigned will continue the Varnish business on the same premises lately occupied by Bigelow & Price, Nos. 318 and 319 Mulberry Street, Newark, N. J., where he now has, and intends to keep constantly on hand, a large stock of all kinds of Varnishes.
From a personal inspection and close supervision in the manufacture of Varnishes for the past eleven years, he flatters himself to believe, that he can furnish the various kinds of Varnishes, which, for working and flowing freely, durability and brilliancy, cannot be surpassed by any manufactured in the Union.
The undersigned respectfully solicits a continuance of the favors extended to the late firm.
MOSES BIGELOW.

COACH WHEEL AND HUB
MANUFACTORY,
46 Railroad Avenue, Newark, N. J.

Hubs of all kinds mortised to order.
☞ Orders thankfully received and punctually attended to.
ALEXANDER ARMBELL.

D. PRICE & FITZGERALD,
MANUFACTURERS OF IMPROVED
COPAL VARNISHES,
DANIEL PRICE, } [Nos. 315 & 317 Mulberry St.,
J. D. FITZGERALD, } NEWARK, N. J.

Coach Body Varnish, light shade, Light Body Varnish, Finishing Varnish, Coach Copal do, Extra Polishing do, White Copal do, Do do, Body Japan do, Do do, Black Japan do, Do do, Brown Japan do, Do do, Leather do, Spirit Turpentine, Oils, etc.

All orders promptly attended to, and shipped in New York free of charge.
One of the subscribers having had more than thirty years' experience in the use and sale of Copal Varnish, they are ready to warrant all articles of their manufacture pure and satisfactory, or may be returned.

TO CARRIAGE MAKERS and OTHERS
DEALING IN AXLES.

The undersigned manufacturers Collinge Patent, Half Patent, Mail Patent, Taper and Cast Hardened Axles, at the Manufactory, 56 MECHANIC ST., NEWARK, N. J.
The Iron used in manufacturing is of the best American Magnetic Iron, and the subscriber, from twenty years' experience in the business, hopes, by personal supervision, to be enabled to give perfect satisfaction to all who may favor this establishment with their patronage. THOMAS BEEBEE, Jr.'s,
Late of the Firm of Harrison & Beebee.

STEPHANAS STEARNS,
MANUFACTURER OF
COACH AND LIGHT WAGON HUBS,
North Granville, Washington Co., N. Y.

Every variety of best Carriage Hubs on hand or made to order, at short notice. Twenty three years' experience and assertion of country productive of the very best quality of timber, enable me to hope to give the fullest satisfaction. References, Malon, Gilbert & Co., and Wm. Lewis, Troy, N. Y., or G. F. Kimball, New Haven, Conn.

PLATT KEELER,
Westport, Fairfield Co., Conn.,
Manufacturer—in a section of country proverbial for producing the best qualities of timber—the very best Hubs of every variety for Carriages, &c., having a large stock of seasoned blocks of every size on hand, ready for turning to suit customers. Orders filled at the shortest notice and on the most reasonable terms, if addressed as above, by mail or otherwise.



DAVID PRICE. THEO. BOND. CHAS. C. PRICE.
PRICE, BOND & CO.,
MANUFACTURERS OF SUPERIOR COPAL VARNISHES,

No. 275 RAILROAD AVENUE, NEWARK, NEW JERSEY.
Constantly on hand a large supply of all the various kinds of Furniture Varnishes, also, White Copal (not in white), for Inside Work, Dammar, &c.

THE CELEBRATED
AYERS' MOUNTAIN BITUMINOUS
COAL,
(From the 14 foot vein, being the largest of Pure Coal ever discovered.)
It is warranted to be entirely free from Sulphur and all other Impurities, consequently invaluable for
COACH WORK, BLACKSMITHS' & STEAM PURPOSES.
If in the superior to any other Coal sold in this market, and having made extensive arrangements to receive it regularly, are prepared to sell, and deliver it, at very low rates, to Dealers or Yards in quantities to suit customers, at low prices.
FELTER & BROMLEY.
YARDS,
169 Chrystie St., near Delancey,
90 East Broadway, near Market St.
Dealers supplied on liberal terms.

THE LARGEST
Hub Manufactory
IN THE
UNITED STATES.

NOTICE OF REMOVAL.

WILLIAM MILES & CO.

BRIDGEPORT
Plating and Furnishing
ESTABLISHMENT.
THOMAS P. WHITE & CO.,
No. 26 GARDEN STREET,
MANUFACTURERS OF
COACH AND CARRIAGE
HARDWARE
AND
TRIMMINGS.

We would invite especial attention to our large and selected assortment of COACH LAMPS, Patts. Dock Handles, Coach Buckles, Name Plates, Silver & Japan'd Knobs, Silver & Japan'd Keys, Japan'd Bottons, D. Nickel Plated Liquid Varnish & Lead Mountain Ornaments, Portable Carpet Fasteners, Silver & Japan'd Buckles, Plated Steel Handkerchief Extinguishers.
PLATING with Silver, Brass and Princes Metal, neatly executed, at short notice.
A general assortment of Malleable Castings kept constantly on hand
Orders from Dealers and others solicited
T. P. WHITE. M. W. BRADLEY.

PIERSON & ROBERTSON,
MANUFACTURERS OF
COPAL VARNISHES,
Cor. Chestnut St. & Railroad Ave,
JAMES PIERSON, } NEWARK, N. J.
ELIAS C. ROBERTSON, }
Transparent Elastic Varnish, for Japanners, always on hand and warranted.

F. REYNOLD,
(Formerly Reynold & Ewe,)
MANUFACTURER OF
EMBOSSED SILVER COACH HANDLES,
CRESTS, ROSETTES,
Harness Ornaments and Letters for Companies
No. 48 Mechanic St., Newark, N. J.
☞ Repairing done with neatness and dispatch.

S. P. SMITH,
Original Manufacturer of
VARNISHES,
AT THE OLD STAND,
Nos. 319, 321 & 323
Mulberry Street,
Newark, N. J.
BEST QUALITY OF WEARING BODY VARNISH

After an experience of twenty four years in manufacturing Varnish, and having increased my facilities for its manufacture so as to keep 20,000 GALLONS, I feel confident of my ability to supply a Varnish which the trade may rely upon, as being a superior article and as low as the same quality can be afforded by any other manufacturer.

Oxidized Varnishes.	Japan Varnishes.
Coach Body Varnish, per gal. $1 00	Wagon Body Varnish, per gal. $1 00
Coach Body Varnish, No. 1, " 1 25	Pale Do. " 1 25
Coach Body Varnish, No. 2, " 1 50	Light Do. " 1 50
Dark Do. " 1 75	Dark Do. " 1 75
Rubbing Varnish, " 2 00	Rubbing Varnish, " 2 00
Polishing Varnish, " 2 50	Polishing Varnish, " 2 50
Extra Polishing Varnish, " 3 00	Extra Polishing Varnish, " 3 00
Light Oxidized Varnish, " 1 50	Light Japan Varnish, " 1 50
Dark Do. " 1 75	Dark Do. " 1 75
Rubbing Varnish, " 2 00	Rubbing Varnish, " 2 00
Polishing Varnish, " 2 50	Polishing Varnish, " 2 50
Extra Polishing Varnish, " 3 00	Extra Polishing Varnish, " 3 00

Orders from Dealers and others solicited.
Office cor. Maiden Lane & Water St., New York.
N. B. A. Varnish Factory, Newark, N. J.
Newark, January 1st, 1858.

Photographing & Engraving.
By PRICE'S PATENT PROCESS.

Parties wishing illustrations of Carriages, Lamps, Springs, Axles, or any improvements in the above named articles, can have them furnished at short notice by forwarding drawings, Photographs, Ambrotypes or Daguerreotypes, of the objects they wish to represent.
The process directly upon the wood. One engraving with the expensive services of the draughtsman.
A full assortment of Carriages furnished at short notice. All work warranted to give satisfaction.
C. J. S. WATERS,
on Pulton St., up stairs, N. Y.
I am permitted to refer to the Publishers of the Coach Maker's Magazine, and many leading firms in Carriage and Saddlery.



C. COWLES & CO.,
29 ORANGE STREET,
New Haven, Conn.
EXTENSIVE MANUFACTURERS OF
COACH TRIMMINGS,
—AND—
FURNISHING HARDWARE,
Also, Manufacturers and Dealers in every description of Wood-Work; such as
Carved and Plain Carriage Parts,
BENT STUFFS, SEATS, BODIES, HUBS AND SPOKES.
They also manufacture a superior article of
NUTS, TURNED COLLARS, DASHES,
—AND—
COACH LAMPS,
And keep on hand a magnificent assortment of Laces, Leathers, Cloths, Damasks, Silks, Cotelines, Tassels, Fringes, Speaking Tubes, Cords, Twines, Binding Materials,
And, in fact, every variety of article in the trade usually kept by
FIRST-CLASS FURNISHING HOUSES.

THEIR MANUFACTURING LIST
comprises the following articles, with many others
In the Trimming Line
☞ A Superior article of spring Rollers, Curtain Frames of every pattern, Japanned Buttons of all colors, Solid and Filled Boot and Finishing Nails, Knobs, of all kinds, Lead Mouldings, Buckles, and Ivory articles of all kinds, Knobs, Screws, Nails, Handles, Slides, &c.

In the Finishing Line

POLE YOKES & CRABS	TURNED COLLARS,
HUB & SAND BANDS,	DOOR HANDLES,
STUMP JOINTS,	NAME PLATES,
CAPPED NUTS,	ORNAMENTS, &c.

With many other articles too tiresome to mention.

WOOD WORKS.

Their Best Seat Rails, Turned Stock, Frame Seats, Spring Bars, Spokes, Hubs, Fellies, Shafts, Bows, Poles, and everything in that line are of the CHOICEST EASTERN TIMBER.

A FINE ASSORTMENT OF CARVED OPERA BOARDS ON HAND.
Address orders to
C. COWLES & CO., New Haven, Ct.

Reproduction in miniature of the advertising pages in the first volume (1858) of the New York Coach Makers' Magazine, from which The Hub emanated.

Digitized by Google

1858 -:- REMINISCENT -:- 1908

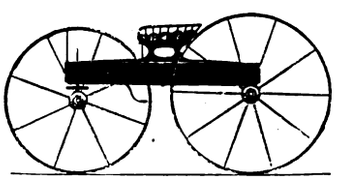
BY JOHN L. H. MOSIER



THE mere mention of the title above, no matter where or when, never fails to refresh the the memory and brush away the dried vari-colored leaves of the autumn of life which uncover the many green spots of the memory of him possessed of more than usual observation as they have journeyed through life.

The half century span which embraces the above title barely suffices to cover the interesting ceremony, which has brought into existence "The Day we Celebrate." We must go back just a few years and begin with the first year of the last half of the century just passed. It was in 1850 that the carriage building trade of the United States began to throw off the yoke it had borne so long. "Pa did it this way;" "Dad did it so;" "Don't do it that way or father will raise the devil." To make an effort at getting out of the deep old worn rut was next to criminal.

A few of the builders began to change things. "Old Man" Jaggers—as he was most popularly known—of Morristown, N. J., "broke through the ice" when he built the famous jagger wagon, which had its popularity for quite forty years. "Abe" Manee made a half circle fifth wheel for buggies, later the shifting rail, and then capped the climax by building a buggy hung on half elliptic springs. Mr. Saunders, of Hastings-on-the-Hudson, evoluted axle making to a certain extent. Very many builders throughout the country abolished the wooden axle, and the leather thorough-brace and jack-spring gave way to the full elliptic spring. A certain Mr. Steele almost gave the trade a "conniption" when he introduced three-sixteenths inch, one-quarter inch, and five-sixteenth inch hand-made bolts for the use of the trade. Then Mr. Skelly of Philadelphia, put into the market his machine-made bolts of Norway iron in all sizes which made the trade wonder. "Well! well! get a 2 in. x ¼ in. bolt for five cents, the iron cost me half that amount" were remarks heard when these small bolts were introduced.

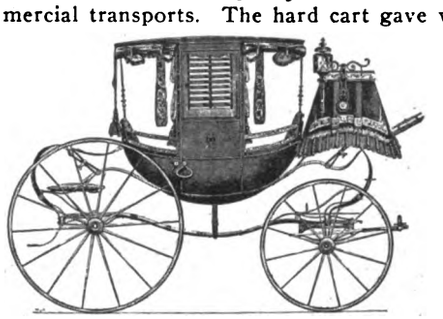


Famous "Jagger" Wagon.

Yes, the yoke was off in earnest. The older makers were drifting away to "Borderland" and the younger element were taking hold. "Fashion"—a celebrated mare—made a mile in two minutes and forty seconds, which was a great incentive to road wagon builders. Then came "Flora Temple"—another trotting mare—who did her mile in two minutes and twenty-two seconds. The whole country became startled, road wagons were at a premium, new concerns for their manufacture sprung up everywhere. Each succeeding year saw new changes. The old heavy cumbersome vehicle which was the mode at the time of the "deluge" began to melt away. The "carry-all" weighing 700 to 800 pounds or more soon drifted from a pleasure vehicle to a grocer's or lumber wagon.

The old coachee, caleche, chariot and similar vehicles with wood perch, body suspended on jack springs, ponderous hammercloth seat with metallic mountings, foot board at back for foot-man and groom, the massive holders for their use, the heavy metallic armorial bearings on the back quarter panels or top leather, all gave way to make room for the new features. Three spring vehicles—one front, two back—all elliptic, wood perch, strongly ironed connections, or vehicles of this order were "the right thing" while they lasted. The "German Berlin" and "French Coupe" created a new era, hung or suspended on platform gears they were much lighter and soon became the favorite. The forty-inches-above-the-ground vehicles with folding steps having three treads were not kept long away from the junk heap.

As it went with the pleasure vehicle so did it go with the commercial transports. The hard cart gave way to the spring cart, which in due season yielded to the more accommodating four-wheeled spring truck, which, greatly improved, still holds on to public favor. The writer would be pleased to extend his story beyond the metropolitan district did his allotted space permit it. He must therefore confine himself to New York and environments.



Coach with Hammercloth Seat.

Carriage Builders Who Were Famous in Olden Times.

Of those who were famous in the days of "Auld Lang Syne," we had out of town, Jason Clapp, of Pittsfield, Mass.; Goddard, of Boston, Mass.; Gould, of Albany, N. Y.; Cunningham, of Rochester, N. Y.; Abbott, of Concord, N. H.; Kimball, of Portland, Me.; Quinby, and Goulder & Post, of Newark, N. J.; Rogers and Dunlap of Philadelphia, Pa.; all of whom were miles away from New York. New Haven and Bridgeport Conn., were carriage making centers, chiefly supplying sales-rooms in other cities. Poor little Rahway, N. J., of to-day, at that time had thirty or more shops of two, three, or four fires each, all of which made a specialty of buggies and four-seaters for the slave states' market only. The event of the Civil War put a general quietus on the trade there and shut off its carriage making industry. J. Urmston of Rahway was the first to make vehicle hubs for the trade in the United States. The large factories which were established later shut off his career as a hub maker.

Spring and axle making was chiefly done at Bridgeport, Conn., and Newark, N. J. "We make our own axles and springs"—as per advertisement of large carriage concerns—tell the sequel as well as can the writer. They have gone West. Phineas Jones & Co. is about the last house of prominence in those days still around Gotham.



Caleche Popular Fifty Years Ago.

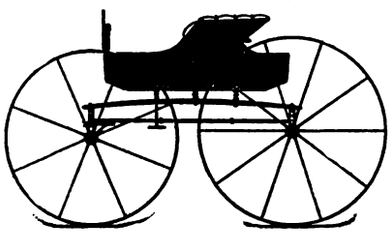
To go on with our story, the carriage building industry of New York was almost clustered. Minor & Stevens; Wood, Tomlinson & Co.; J. R. Lawrence and Brewster were all on Cortland Alley. The Fords and Flandraus on Elizabeth Street; Wier on Mott Street; Manee on East Broadway; Stivers on

Digitized by Google

Eldridge street; Dusenbury and Vanduzer on Christie street; Williams & Dingee on Laurens street; and "Pete" Dubois on Wooster street. These were about the whole of the "down-towners," not one of them more than a trifle of one-half mile distant from the main center. There were salesrooms on Broadway, but they were not considered among the manufacturers.

Then we had Lawrence & Townsend at Fifty-third street and Third avenue, of whom Mr. Lawrence went with Brewster & Co. as manufacturing partner in 1856. Larry Brower at Fifty-sixth street and Third avenue, who went out of business in 1861; John C. Parker, Eighty-fourth street and Third avenue, who afterwards joined with J. B. Brewster on Twenty-fifth street near Third avenue. Lockwood & Gillen, 127th street and Third avenue, builders of fine work went out of existence in 1861; Levi Adams, 125th street and Third avenue went into real estate about 1865 and soon went to the wall. Wm. Ellis left East Broadway in 1851 and located at Sixty-seventh street and Broadway. By 1854 he quit but established a one horse business in Flushing, N. Y. There were others of whom space does not permit mention.

Of surprises in the early days, the following were considered important: When Chas. Beardsley in 1854 went into the wilderness, corner Broadway and Thirty-sixth street and built a four story factory on two lots, he was voted demented. He succeeded nevertheless and retired about 1870. The other surprise was in 1856 when Brewster & Co. began business in their six story building and basement at 372-374 Broome street. It grew larger, taking in 376-378-380 Broome street and abutting property on Mott street. "They will never succeed." "There are too many here now" was remarked by all. They are still here, but their master stroke was when they moved to present quarters in 1873. What has become of them? Of the whole, but two houses are left, Brewster & Co. and R. M. Stivers. Miner & Stevens slid out by degrees. The same story applies to nearly all the others.



Forty-inches-above-the-ground Vehicle

Of famed workmen none are left. Soper, Nuffer, Palmer, Nepple, Legg, Scanlon, Haggerty, Corbett, Hunt, Reid, Menshouser, and all other able mechanics are gone. Of supply dealers—John P. Jube went across the Divide a few years since at 92; Charles Bouton went out to no one knows where; Charles Weeks, a good fellow, also became lost to the trade; Thomas Jube, as good and honest as they grew, lost all ambition after "Jake" Dunn forgot to return him his $10,000 U. S. Bonds. Chisty Striffler also went across the Chasm.

"They are dead. They are gone in the Churchyard laid."

Some of the old timers took a back seat on "Easy Street" among whom were the Gedney Bros., blacksmiths and proprietors of the Gedney House, Broadway; Charles Garnau had two six story tenements; Theophile Lauzo owns about twenty tenement buildings in Astoria, Long Island City; John Nuffer had at his death a grand home at City Island and a goodly income; John McCullough, formerly a smith finisher at Brewster & Co., became chief of the New York Police and retired on half pay; "Tom" Murphy, finisher, has thirty years to his credit on the police force.

You say, "Where are the rest?" Echo answers, "Where are they?" While the writer remembers them all, when he hears of the death of any of them—employer or employed—he reflects to whom he must or can convey the information, and repeats:

"I feel like one who treads alone
Some banquet hall deserted,
Whose lights are fled, whose garlands dead
And all but me departed."

Prior to the establishment of trade journals, the carriage business was confined chiefly to the New England and Middle states. The trade had no exponent by which novelties could be conveyed. A vehicle must come from an Eastern builder to be of value. As soon as trade journals became vehicles of information, conveying all that was worth knowing, the Western builders cut out their old fashioned ideas and adopted the new features. Three or four days after a new New York style of carriage is published in The Hub it is in the hands of every one of its subscribers in the United States and Eastern Canada. The writer has no hesitancy in saying that without trade exponents vehicles building would never have moved so successfully as it has during the last half century. That the progress will be continued is the wish of the writer.

MOTOR COACH vs. TALLY-HO.

When the motor coach goes speeding
In triumph through the land,
Will it end by superseding
The spanking four-in-hand?
Ho! Let them run together,
Each in its chosen way,
And in the coaching weather
We may observe, some day,
Upon the journey downward,
The jocund tally-ho
Proceeding slowly townward
With the motor coach in tow! R. G. W.

RECALLING EARLY HISTORY.

The accompanying communication from Mr. J. L. H. Mosier, one of The Hub's earliest and present contributors, gives an interesting side light on the early history of this publication.

Editor of The Hub:

Dear Sir—The title of the song popular so many years since was, "I would not live always."

The writer is aware that he cannot continue right along in the, or with the human race, and is consequently unloading all possible freight from his memory at the proper stations along life's pathway where it belongs. As a matter of course there are many things I would not unload from the fact that the same would produce unpleasant surroundings and must go out with the writer.

In relation to early vehicle journalism, the late John W. Britton and the writer were firm friends from 1850 until he passed away in 1886. Soon after I entered his employ the writer was his confidant and knew much of him before he entered the service of Brewster & Co.

Mr. Saladee started the Coach Makers' Magazine at Columbus, Ohio, at the instance of John W. Britton, the latter not wishing to be recognized with it. Ezra M. Stratton was a wagon maker on Elizabeth street, between Grand and Broome streets, who did the crating and boxing of vehicles for shipment by Brewster & Co. At the instance of Mr. Britton he became the New York agent of the Coach Makers' Magazine, while Mr. Britton himself did the editorial work.

When Saladee tired of the matter, Mr. Britton supplied the means and put the publication into Stratton's hands as editor and publisher. Isaac M. Britton was the reputed draftsman—the real man at the wheel was Ed. Wells, foreman of body shop at Brewster & Co.'s and at the time the most able of his kind. Stratton's lease on Elizabeth street place expired, and he could not find a place in the vicinity. John W. Britton had become too busy to give Mr. Stratton any further help. About the same time Lawson Valentine became intimate with Mr. Britton. Mr. Valentine's wife's brother, late Geo. W. W. Houghton, started The Hub. The writer became a subscriber at fifty cents a year and a contributor to the second number.

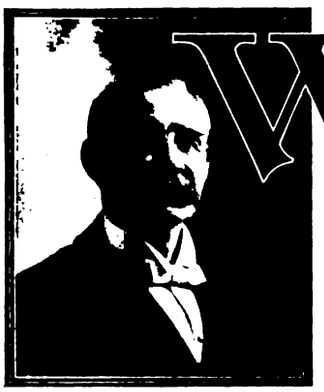
Respectfully,

J. L. H. MOSIER.

Digitized by Google

Memoirs of a Wheel Maker

By Henry P. Jones



WHEEL-MAKING is a business demanding the greatest care and attention, and to those whosoever may contemplate entering in the manufacture of wheels the writer says, don't. Why, do you know the poor farmer is such an autocrat that he wants you to advance the money to pay for the manure to put on his ground, to start the hickory tree growing, and when the timber is shipped, he wants to draw on bill of lading.

About thirty years ago we obtained a great many of our rived hickory spokes from within twenty miles of our factory at Newark. On Saturday there would be from fifteen to twenty loads of rived spoke billets come in our yard. By the term "rived" spokes is meant that they are split out, not sawed, and a split spoke billet is much better than a sawed billet.

This supply has now about become exhausted and as the State of New Jersey has produced the best hickory that ever grew, I should like to see our national government make an appropriation for the planting and culture of the hickory tree, distributing the money through the different congressional districts. It would be capital well invested.

The different woods used in wheel-making—hickory, elm and oak—must be dry before using, but not too dry. Kiln heat is not good, it is too severe and even in a moderately heated dry-room, timber should not be kept too long, as it takes the life out of it, especially of hickory and elm.

In preparing hubs for wheels they have to go through ten to fifteen machines. Spokes—according to kind—through twelve to sixteen machines. Rims—through nine to ten machines, and about double this number of hands who must exert great care in the different processes of manufacture.

In manufacturing wheels, the front wall of a mortised hub must be perfectly true and perpendicular. The spoke to go into this mortise should be faced perfectly true, so that every part of the face of spoke shall touch every part of the front wall of the mortise. The taper of back wall of mortise should be exact and each mortise like its fellows, no variation. The taper of spoke should be made to correspond with the taper of mortise, giving a slight pinch in driving. Every lot of spokes should be fitted to its companion lot of hubs, and not the hubs mortised to fit the spokes.

Now if a spoke is dubbed off at the point, the driver, when he comes to drive them, finds his spoke going back—as the face of the spoke will not seek the face of the mortise—then he pulls it forward to bring it up to the guage, and when the spoke is driven there is a vacuum at the foot of the mortise. The same thing occurs when the spoke is faced badly. This is one of the most particular things in wheel-making. There is also danger in a spoke being driven too tight because of its liability to break down the wall of the mortise.

After the spokes are driven into the hub one must exercise due care in rimming of wheel, so that the rim will not be too long and cause the wheel to get rim-bound, nor too short, which will throw too much dish in the wheel. The rim should be bored so that the tenon of the spoke will fit very snug at all points, each hole receiving its own spoke. Wheels tenoned right and rims bored right and the timber just right, never require screwing and never split.

When the carriage maker gets a fine wheel, he can ruin it without half trying, in boxing and tiring it. In boxing a wheel, wet white lead should never be used, as the impure oil will soak up in the tenon of the spoke and cause it to get loose. I have drawn spokes out of hubs where the boxes are set in white lead, and sawed the spoke off three inches above the tenon, and in a half hour's time you could see the oil work up through the wood, the air drawing it up and out.

Dry red lead and slush varnish are very good for setting a box. The old firm of Long & Silsby, of Albany, set their boxes that way twenty-five years ago. A hub should be bored exact to size of box, not cutting too much wood away and filling up with wedges. Only recently we had a set of wheels returned, which were so badly cut away that the boxer had to drive in seven wedges, and they were big one too, 7/8 in. wide, 3-16 in. thick and about 1 inch long. These caused the hub to shell up and go to pieces. Besides, when the hub is cut away in that manner, it lessens the depth of the spoke tenon and leaves insufficient holding surface.

One great cause of wheels failing is the shelling of hubs. The back end of the hub is more liable to shell because the back band is put on too tight, and when the hub swells from washing, etc., the center swells while the back end of the hub is held tight by the band, and consequently the wood shells up. Good timber is more apt to shell than poor timber. Of course the poor wheel-maker has to stand the brunt of all these mishaps.

Regarding guarantees the writer wishes to say a few words. Wheel-makers think sometimes the carriage maker asks too much of us. We recall one instance when a party sent back a set of wheels claiming they did not stand well. We scraped the front of the hub to see the order number, and found that they were over eight years old. We simply had to write the carriage maker informing him that there was some limit to a guarantee.

Looking back over the wheel business since 1855, when our firm started business, I take pleasure in giving the different proportions of wheels. In 1855 to 1860, the proportions varied. Heights of buggy wheels were 3 ft. 10 in. and 4 ft. 2 in. and 3 ft. 11 in. and 4 ft. 3 in. Now 3 ft. 6 in. and 3 ft. 10 in. is the prevailing height in the East and 3 ft. 4 in. and 3 ft. 8 in. in the West. Buggy hubs were 4¼ in. diameter mortised for 1-in. spoke and 14 and 16 in. diameter. Now hubs are 3½ in. in diameter mortised for 1-in. spoke and 14 and 14 in number.

Some of the leading carriage makers of fifty years ago who had accounts with us were:

W. H. Flat, Rahway, N. J.; J. M. Quinby & Co., Douglas & Post, Joseph Colyer and Baldwin & Thomas, Newark, N. J.; Jason S. Hoyt, Syracuse, N. Y.; Enoch Blackwell and John W. Bates, Utica, N. Y.; J. W. Fredericks, Poughkeepsie, N. Y.; T. & J. Cooke and Hale & Waterbury, New Haven, Conn.; Long & Silsby, Albany, N. Y. We also found orders from Brewster & Co. of Broome street and J. B. Brewster & Co., New York City.

The price at this time for best wheels was $12 net, and the lowest price was $8, while to-day the prices range from $4 to $18.

Wages during this period were $1.25 and $1.75 for best men, and 75 cents and $1.00 for others. We have four men now in our employ who were with us in 1855-1860. By our order-book it would appear that the panic of 1857 began in October and the dull times held until March, 1858.

Among the buyers in the North were: C. P. Kimball & Co.;

Digitized by Google

J. & J. Russell, of Portland, Me.; W. B. Keen, Malden, Mass. In West Amesbury, now known as Merrimac, Mass., there appears the name of J. S. Poyden, dealer in carriage goods. In Boston, Sargent, Harlow & Co.; Whittier & Poyen, afterward W. P. Whittier & Bro. and James Hall & Son. In Bridgeport Height & Hubbell and J. C. Mott & Co.

In 1864 we began selling Louis Mansuy, of Hartford, Conn., which later became Louis Mansuy & Son, and still later Mansuy & Smith. This firm we believe is still doing business at the old stand. W. P. Sargent & Co., of Boston, were large buyers of wheels, also J. W. Sargent, South Amesbury, now Merrimacport.

Wages did not advance until 1863. Our men tell a story about one of our workmen who was getting $1.75, and came to the office and asked for a raise in wages to $2 per day, and Phineas Jones, senior member of the firm, said to him: "Great Scott, man; $2 per day ain't wages, that's a salary."

Our books show we paid a monthly war tax commencing September 1, 1862, of 3 per cent. on sales. July, 1863, it was raised to 5 per cent., and in the spring of 1865 it appears to have been 6 per cent., running to July, 1866, when the tax was abolished.

The wheel and carriage trade did a bonanza business in the years from 1865 to 1870; prices were first class, orders plentiful, no one failing, and everyone making plenty of thirty-five cent dollars. At one time gold touched $2.87, we think, and, therefore, if a party made $15,000 per annum he only in reality made a little over $5,000 in gold. While profits were large on their face, the amount was fictitious. Our firm was getting $25 per set for ¾-inch tread wheels, only cash discount off, no delivery, but a straight price; $10 per set for cheap wheels.

New names appearing on our order books about this time were: Shaible & Butler, Schenectady, N. Y.; Clapp & Tallman, Hayden & Leitchworth, Auburn, N. Y.; Lown & Horton, Troy, N. Y.; J. M. Strickland, New York City; W. B. Laninger and J. V. Deshong, Belvidere, N. J. We also note the honored name of I. B. Chadburne, Saco, Me., who will be remembered by many of our association. Martin Pennell & Co., James Bailey & Co., and James M. Kimball & Co., of Portland. In Boston, Joseph F. Fray and Captain John A. Scott, the latter president of our C. B. N. A. in 1889 and 1890; In New Haven, Stephen M. Weir and Brockett & Tuttle.

New York State furnished us as customers: Pulver & Poucher, Oswego; John Packwood, Skaneateles; E. Chamberlain, Troy; A. L. Christie, Nyack, whose sons A. E. & J. H. Christie are still in the business; A. Wilkey, of Brooklyn, bought wheels from us in 1866, and he is still in business; Herrick & Seeley, Elmira; Edwards & Gilman, C. P. Phillips and Olmstead & Jones, of Syracuse.

We can recall only one boom in the wheel business, and that was during the velocipede fever. At that time pairs of wheels were made for which we received $6 to $8 per pair—low wheels. What a contrast to now, when buggy wheels per set of four sell for $4 or less.

In 1873 began the hard times from which the country did not recover until 1879. From 1880 to 1885 were five good years; 1882 was the best year's business for our own factory, being the banner year; we were busy from January 1 to December 31. The wheel New York State took this year was $8, and no trouble to sell them, as parties wanted wheels and wanted them badly. From 1885 to 1890 business was only fair; 1890 to 1895, business fair, but prices low.

A new condition arose in wheel making in 1894, that is equipping wheels with rubber tires. The first we did of it was in October, 1894, and at the convention held that year in Philadelphia the first samples were shown. Candidly speaking, we think it has hurt the wheel trade 25 per cent., because the rubber tires by increasing the life of the wheel, has reduced the demand about 25 per cent. It has also affected the business of the small carriage maker.

In 1895 to 1900 another new condition arose, manufacturing wheels for automobiles. In January, 1899, we began making wheels for this trade, and the business has steadily increased. The making of these wheels is quite different from the regular carriage wheels, the hubs being of metal and the wheel being something on the principle of the Archibald wheel; the spokes all touch, and they require a very large head, making them eat up timber fast.

JACOB R. HUNTINGTON EXPIRES.

Jacob R. Huntington, pioneer of the carriage industry in Amesbury, Mass., and founder of the wholesale system of manufacturing in Cincinnati, O., died suddenly in Amesbury, the town of his birth, on September 18, while calling upon a friend. He was born in 1830 and was therefore about 79 years of age.

Mr. Huntington gave the impetus which started Amesbury upon its career as a carriage manufacturing center. He began his active business life in West Amesbury, now Merrimac, as a painter in 1853.

In six weeks time Mr. Huntington had accumulated $100. With this he secured a room and in Amesbury began the making of a carriage. This was the beginning of the carriage business in Amesbury. It required eight weeks to complete the vehicle, at which time it was sold for $32. During the following year he turned out 13 carriages.

In 1858 he went to Cincinnati where he inaugurated a system of duplication in the manufacture of vehicles, which worked very



Jacob R. Huntington.

successfully. He was thus the founder of Cincinnati's distinctive industry as well as the pioneer carriage builder of Amesbury. Mr. Huntington remained West but a short time, returning home, where he commenced the building of carriages. He continued to push on successfully, his business constantly growing until he was manufacturing at the rate of one carriage per day.

While he was conducting a most successful business, he one morning found his plant, valued at $18,000, swept from sight by fire. He had but $2800 insurance with which to get a new start. His large amount of energy and business knowledge soon found him erecting a four story building. In this building and one or two others added to his plant he successfully built carriages till 1875 when he retired from business.

Mr. Huntington was the donor of the Bartlett statue that stands in Huntington square, Amesbury, and which was accepted with great ceremony on July 4, 1888.

He is survived by a wife and two daughters, one of whom is the wife of John S. Poyen, of Amesbury.

Digitized by Google

From Sedan Chair to Motor Cab

Embracing a Period of Three Centuries



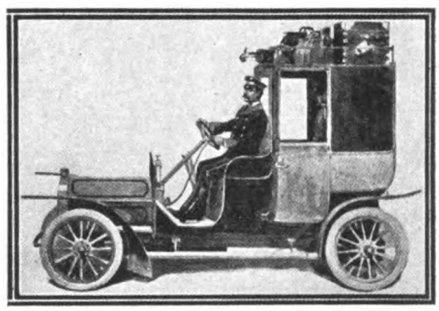
IN order to keep the readers of The Hub well posted in up-to-date road and motor car carriage building in all parts of the world, we reproduce here illustrations from a London contemporary, "The Sphere," showing the onward march of road and motor coach making during the last three hundred years.

As we look down the centuries and penetrate the gray dawn of antiquity, we see the verging forms of the chrysalis of modern carriage building, whose development has had to pass through many refining crucibles before reaching its present high water mark.

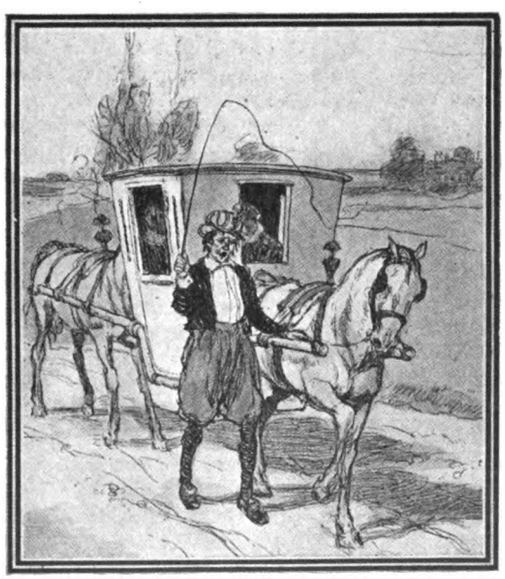
The many forms of roads carriages—their times and uses, shows that to die is but to live and that we must always keep on the onward march of change until each cycle reaches the crossing of the ways—through which new findings are evolved.

The illustrations we reproduce here in connection with the article following will make very interesting and profitable study to the readers of "The Hub" throughout its wide circulation.

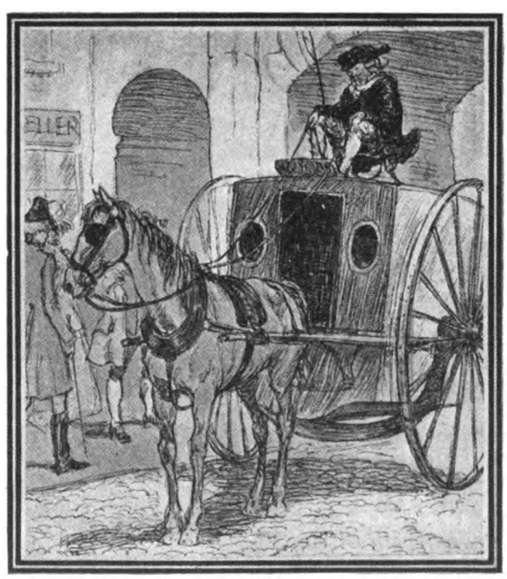
The streets of London have recently seen many startling innovations in new methods of transit, but the end has by no means been reached; rather we appear to be just at the beginning of an era of mechanical propulsion. During the recent months New York and London have become used to seeing colored motor cabs nimbly flying along the streets. The popularity of these cabs has shown that there is a great demand for motor hackney carriages in and about the metropolis. But it is clear from the fact that the total number of this type of carriage licensed up to June 22, 1907 was only 374 as compared with the 10,942 horse cabs licensed by Scotland Yard for hire in London alone for the year ended December 31, 1906, that the supply is not equal to the demand. This state of things has been altered as several hundreds of the new and improved form of motor taximeter cabs are plying for hire on the streets of New York and London, where they have become familiar sights.



These latest expressions of the metropolitan motor cab offer several advantages which prove decidedly attractive to users of cabs. First, they are capable of carrying the same amount of luggage as is carried on the four-wheeled horse cabs. Up to the present this question of luggage has not been adequately provided for. Thus the public is able to hire a vehicle which will give them everything the old form of cab could provide, with the additional advantage of the taximeter method of payment and of increased speed. The new cars, which are made by the Fiat Motors, Ltd., is four-cylindered and from twelve to sixteen horse-power, with either open or closed doors. They will seat four persons inside and all carriage work is of the very latest design both as regards style and convenience. The fact that the cars are four-cylindered render them at once silent and powerful so that they are able to undertake any length of journey whether short or long.



Horse Litter Used for Centuries as a Hired Vehicle.



The Boulnois Patent Cab Used in 1835.

The Story of the Cab.

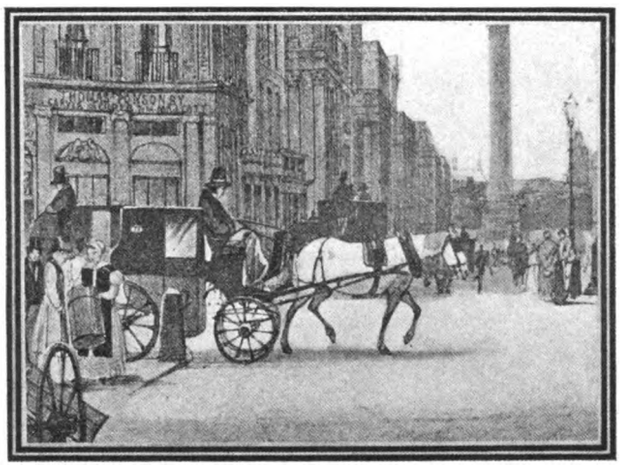
This latest cab comes at the end of a long and interesting evolutionary line that stretches back to the days of the horse litter, which appears to have been the earliest form of hackney vehicle. It lasted for several centuries until in 1680 when what appears to have been a last reference to its use, occurs in the "Last Speech of Thomas Pride" in The Harleian Miscellany. There it appears, that in 1680 an accident occurred to General Shippon who "who came home in a horse litter wounded

Digitized by Google

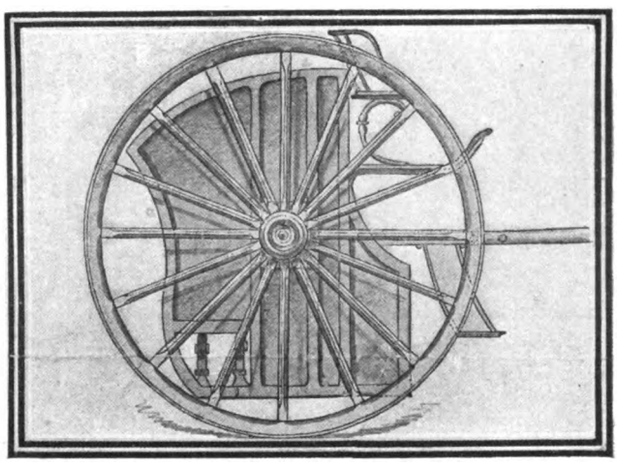
to London; when he paused by the brewhouse in St. John Street a mastiff attacked the horse and he was tossed like a dog in a blanket."

It was in the year 1605 that hackney coaches, as they were termed—and as cabs are still officially designated—came into use. But at first they were not allowed to "crawl" or even stand in the streets but had to remain in the owner's yard until called for. A rare print is extant showing a group of these heavily built hackney coaches outside St. Stephen's Hall, Westminster, in 1637. So popular were these early cabs that from the four hackney coaches first placed by one Captain Bailey at the "May-pole" in the Strand they rapidly increased in numbers that in 1635 Charles I. issued a proclamation stating that the "general and promiscuous use" of hackney coaches in great numbers causes "disturbance" to the King and Queen personally, to the nobility and others of place and degree; "pesters" the streets, breaks up the pavement, and causes increase in the price of forage. Their number was for a time slightly decreased by this Act still the competition soon became keen enough to affect the watermen on the river, who were extremely jealous of both the coach and the sedan chair, while the two latter respectfully regard themselves with considerable enmity.

In 1662 the number of hackney coaches increased to 2,490. Some of these vehicles were fitted with large "boots" which were at first used for the accommodation of passengers and later for the carrying of luggage. At first many of the hackney carriages were merely second-hand vehicles bought from wealthy Londoners of the period, and were generally of a heavy, cumbersome construction, but later on the form of the carriage was much improved. At the same time we must take notice of the sedan chair as one of the earliest methods of conveyance which could be hired by the public. They were very popular.



The "Growler" of Early Victorian Days.



Joseph Hansom's Cab Which Was Patented in 1835.

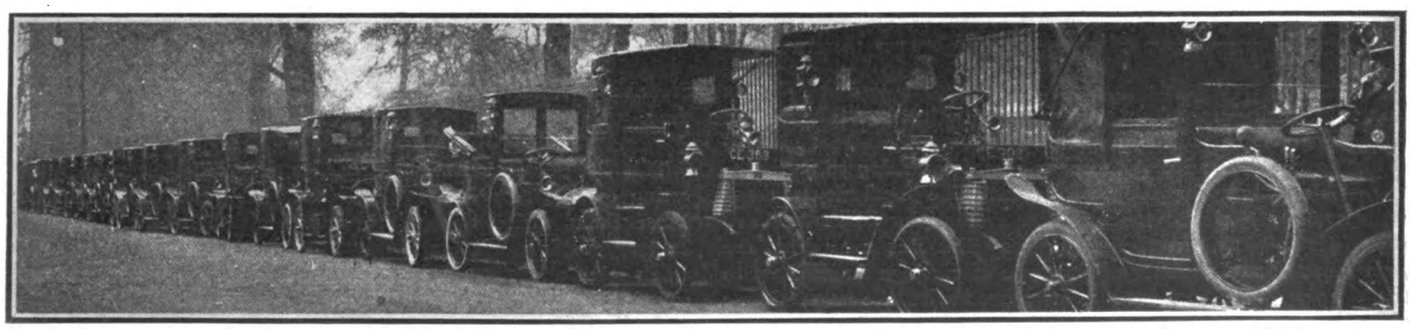
In 1740 John Tull was granted a patent for a sedan chair fixed on a wheel carriage to be drawn by a horse.

The early cabs were four-wheeled vehicles, and it was not until 1740 that the first patent was granted for a two-wheeled carriage. The first two-wheeled cab, however, did not actually ply for hire until 1823; this was Mr. Boulnois's patent cab—a strange, weird-looking vehicle possessing two wheels of enormous diameter. The body of the cab was sunk low between these huge wheels; the driver sat on top over the doorway, and two lozenge-shaped windows admitted light into the interior. Then a "brougham cab" for two was invented about 1863, and was a little smaller than the famous vehicle to which Lord Brougham's name is attached. From this conveyance was developed the "Clarence" cab which remains with us still as the familiar four-wheeler. The hansom cab dates from about the same period. The original is herewith illustrated.



Modern Hansom Cab Now Being Relegated to the Past.

The usual form of hansom cab has held the streets of London and New York for many years and was not seriously challenged until the beginning of last year when a considerable number of motor cabs were placed on the streets for hire.



Strings of Motor Cabs Are Now Observed in Public Places in the larger Cities.

Digitized by Google

First Ten Years of the C. B. N. A.

By JOHN M. DAVIS



THE work done by the C. B. N. A. during the first ten years of its existence laid the foundations for its after growth. Following the Civil War for eight years the question of labor agitated the minds of employers generally. When the call was issued for the first convention it was expressly stipulated that the labor question was not to be touched. This quieted the minds of a few who felt that they would prefer to deal with this question as they saw fit. The early history of the carriage conventions has so frequently been the subject of historical allusions that no attempt will be made to repeat what has been so frequently written. Certain other features will be referred to in the early developments which have not been spoken of, and to which the "old-timers" have in more recent years often referred, viz., the establishment of new and high ideals as to the broad conduct of the industry and the broadening out of the spirit of fraternity.

The old-timers in recent years, and some of those to whom the traditions were handed down, attach great importance to those early conventions. They say, and say truly, that the value of these meetings was not in what was done by resolutions, but what was accomplished through the social intercourse of men who had in a certain sense come to regard each other as enemies. That the traditions of the first ten years were more important than the proceedings need not be wondered at when it is recalled that each of the consenting firms, that is, consenting to meet, realized that there was nothing to be done in the way for formal agreements.

The Reason Why.

The reason for this was that the spirit of personal independence was rampant. Carriage builders wanted no strings tied to them. The United States as a nation had been only recently reborn. The memories of the great civil war were fresh. The most powerful stimulus a nation had ever received in the way of industrial expansion and social uplifting had just been set to work. Railroad building and the spirit to span the continent with bands of steel had just seized the leaders in the world of business and finance and manufacture. The first Bessemer steel rail mill had only been recently built. Brilliant schemes filled the minds of the enterprising men of the nation, as the spirit of poetry fills the soul of the poet. The mighty nation and the mighty industries and the mighty system of transportation as we now see it were then in conception.

It was when these influences and agencies were seizing on the men who stood in the forefront, that the thought of unification of the carriage builders developed. Men came from all over the east, from as far south as Richmond, Va., and from as far west as St. Louis. It was a notable gathering of men, many of whom met for the first time at the St. Nicholas Hotel, New York, on November 19, 1872. The country was in the flower of prosperity. Transcontinental roads were under construction. The spirit of agriculture filled the great West. A sudden need for vehicles sprang up. Mechanics who knew how to make machines and tools, but who did not know how to build carriages, began to show carriage builders how to build ten carriages where before they had built one.

It is not designed to make this review historical as to details and events and names. It aims to deal with the underlying spirit and the conditions of the times. But reference to a few names of those who first met through their representatives will be permissible in order to throw a strong light on the first little footsteps of the great organization.

Abbott, Downing & Co., of Concord, met the elder Studebaker, of South Bend, Ind., and Wesley Fallon, of St. Louis, and George L. Brownell, of New Bedford, Mass., shook hands with A. A. Wheeler, of Louisville. Hugh Johnson came all the way from Detroit and sat beside F. D. Parry, of Amesbury. Peter Crocker journeyed from Richmond, Ind., with the representatives of Shaw & Lippincott, of Indianapolis. Builders from Cincinnati shook hands with their brothers from New England and New York. Builders from Richmond, Va., and Amesbury, Mass., compared notes.

The Birth.

The first meeting was the greatest of all surprises. Some came through mere curiosity; some to see if they could pick up some ideas from the Eastern builders; a few came rather than



Chas. P. Kimball, first President serving three years.

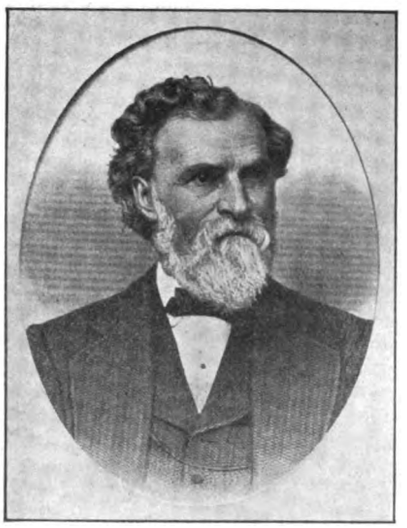
have it appear they were indifferent. While the minutes show no more than the usual formal preparations for organization, the real work done was never recorded. But little did those who met suspect the collapse that was to befall the country the ensuing year. Out of the seven thousand carriage builders forty-two met, but every repairer was then a carriage builder, and the country was covered with small shops which were dignified by the name of carriage building plants. Even then there were over eleven thousand shops in the country where carriage work was done, and over fifty-five thousand workmen were employed, not so many less than are even now employed, but their production per man was very much less, though the wages paid was relatively higher.

Effect of Machinery.

Let us sidestep for a few moments to observe the effect of machinery on the industry, and look forward three or four decades. Since the organization of the C. B. N. A. production has increased fourfold, while the number of mechanics has in-

Digitized by Google

creased in the relation of 5 to 9. Wages have increased, roundly speaking; that is, the volume of wages paid in the ration of 5 to 10; that is as compared to the volume of wages paid, production has more than doubled. It would be mere haphazzard to attempt to say how much the price of work decreased per dollar of cost of material and labor, nor how much the cost per average vehicle decreased in price. Over three times as much material is being used, and the value of products has doubled. But this statement by itself is misleading, because to-day so much more is given for a dollar than thirty-six years ago. In this period the average wage, taking all wage workers into



Henry Killam, Second President Serving Three Years.

account, increased 20 per cent. for the entire period, but this does not represent the advance within the past two or three years.

Personnel of Early Officers.

Another purely historical reference may be pardoned. Chas. P. Kimball was president for three years, followed by Henry Killam, three years, and next John W. Britton, three years, which brings us down to practically the last old-timer of prominence, Henry C. McLear, who was elected in 1882-3-4-5, which leads us beyond the limit intended to be covered by this review.

The Official Guaranty.

It was at the second convention at New York that the official guaranty, practically in its present form, was conceived, elaborated and adopted. In view of the recent agitation on this subject, it will be permissible to go into the causes and conditions which brought that action about. The talked-of revision of guaranty will come in due time, and almost of its own accord.

As elsewhere noted in this issue, carriage construction for some years had been running wild, as it were. The sudden expansion of demand following the Civil War stimulated demand and skill, good, bad and indifferent, and as will be noted by reference to the carriage factory and shop output of those years, the range of ideas was very wide. Construction took on all sorts of capers; all sorts of assurances were given; all sorts of terms prevailed; all sorts of quality; and sometimes no quality, were turned out. There was lack of uniformity in construction. An Irish rule was as likely to prevail as the subsequently popularized French rule. Things were going kriss-cross. Builders, that is, the sort of builders who attended the second convention at New York, felt that something must be done, and they did it, and hence we had and have the official guaranty.

The First Convention Failures.

The panic which precipitated itself in 1873 struck the carriage industry between the eyes. Interest in the association temporarily subsided, and the secretary was obliged to announce in advance that there would be no convention held that year. Even the following year, the Centennial year, when the association met in the Centennial Grounds, the attendance was light, but the few wheel horses who did attend transacted a lot of business, and their devotion and courage subsequently revived the spirit of organization. The interest grew rapidly from that time and later conventions were well attended.

The Timber Question.

The perusal of the old convention reports reveal deep interest taken by the carriage builders in the future supply of timber. The evils now the subject of somewhat frantic discussion were then clearly pointed out as among the possibilities with which the industry would have to reckon. The association called the attention of the government to the impending dangers. But there was no Forrestry Department then to lend ear to the appeals and warnings. Year after year the association sounded alarm without avail. Timber was plenty and the officials looked upon the communications from the carriage builders as deserving of no more than a courteous recognition of their correspondence. Had the proper steps then been taken it is safe to say that the timber problem to-day would be less disturbing. The meeting at Philadelphia, the fourth, was the first one held out of New York City.

Prizes for Working Drafts.

The carriage builders, from the very start, privately recognized the necessity of stimulating educational effort among the workmen. When the next convention met, which was at New Haven, Conn., under the presidency of Henry Killam, it was agreed that prizes should be offered for working drafts of carriages of different styles. After many years of patience and the encouragement which prizes offered, the matter fell through. While the carriage journals continued to instruct workmen with carriage drafts, the proper spirit had not yet penetrated the shops. There was a great deal to learn. The English mechanics knew it all and did not know much of anything that



John W. Britton, Third President Serving Three Years.

was practical after machinery began to upset old methods. American mechanics had everything to learn and while they were apt students they were not far enough along to originate anything. That was left to the rising school of draftsmen, most of whom had their teachings in European factories. Besides the inventive and originating spirit of Americans made it awkward for them to follow lines and curves and to become familiar with their underlying principles. It must also be said in justice to the workmen, that as a rule, the great body of their employers had not risen to the appreciation of the value of working by drafts. This appreciation was largely confined to

Digitized by Google

the few large custom builders. Besides, drafting is an art which must be born in rather than put in.

The Banquet Spirit.

Up to this time the social features of the annual meetings had not received much attention—that is no feature had been made of it, though there had been social affairs outside of meetings—more of the square-meal sort. But at New Haven the one hundred and twenty-five delegates were invited to attend a banquet—a clam-bake by the sound, and this gave the thought and impetus to the banquet feature. Next year, at Boston, there was a genuine banquet to which one hundred and fifty sat down, and which was followed next day by a clam-bake at Revere Beach. The Boston visit was made additionally interesting by a visit to Amesbury and Merrimac, where there was a genuine fraternal time of manufacturers in brother manufacturers' shops.

The West Takes Notice.

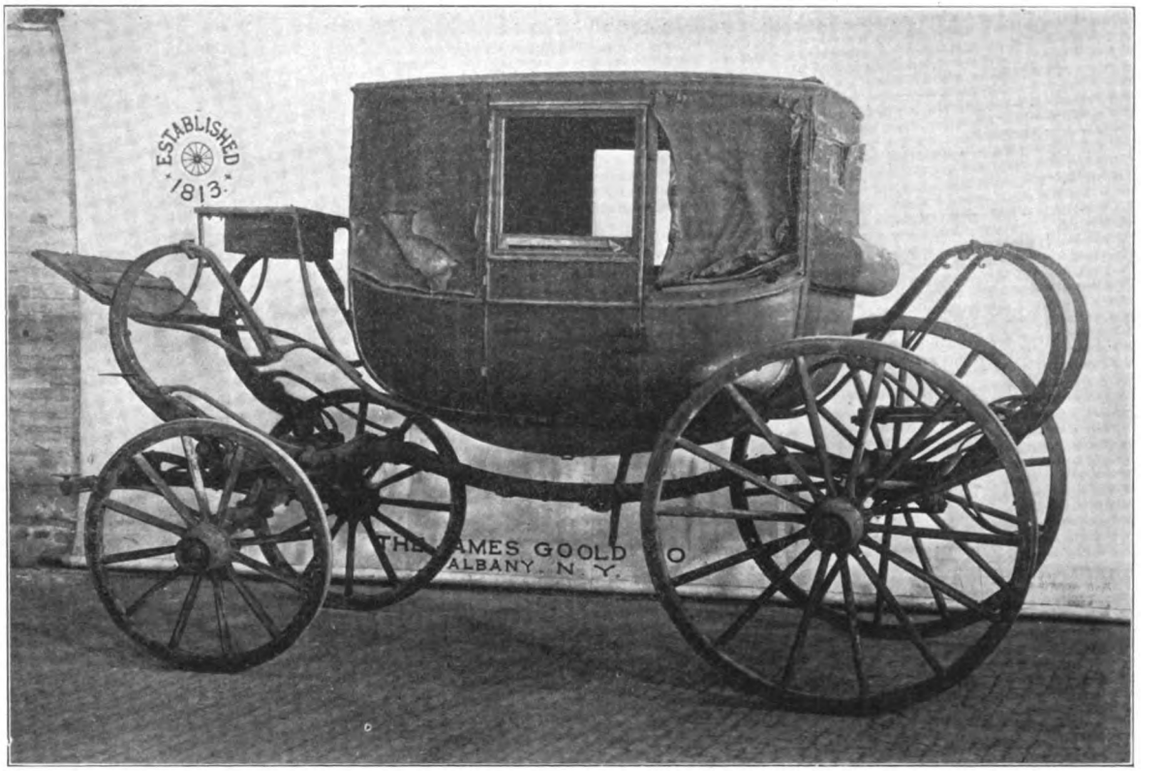
Two hundred carriage builders, quite a sprinkling from the West, attended the next convention in New York, in 1879. The panic was over. Business began to boom. Carriage factories were springing up all over the West. Peter Cooper delivered an interesting address to the delegates from sixteen states. The association, for the first time, felt itself a power. The press noticed it favorably. The members found plenty to talk about. Strange faces from the West met strange faces from the East. Heretofore there was no rivalry as to where the next meeting should be held. Chicago rose up and invited the convention there. The invitation was enthusiastically accepted. Eastern builders saw a chance of becoming known in the West. The pleasure features received particular attention. The builders of New York, Brooklyn and Newark took the members to Coney Island on a steamboat and showed them the elephant and they wound up the day at the theatre.

The Technical School.

When the next meeting was held in Chicago, the East turned out well. The roll showed one hundred and fifty present. It was here that the idea of a technical school was first broached. The favor with which it was received was shown by the fact that the sum of $5,490 was promptly subscribed and a committee was appointed to see that such a school was established. A new spirit pervaded the meeting. A conception of broadness was born. The purpose of making it a truly national organization became manifest. It was the largest and most enthusiastic convention of all. Over four hundred were present when the banquet doors were opened. Chicago showed it appreciated the honor. The members were taken around the city in carriages, visited the stock yards, and visited by invitation the plant of the Studebaker Mfg. Co. at South Bend.

The Birth of the Exhibition Idea.

A few of the practical westerners thought they might as well add interest to the occasion by showing some of their handiwork which they did by bringing some of their material and standing it up in the rotunda of the Grand Pacific Hotel where the convention was in session. The idea was a novel one but "took," and this informal action struck a chord which later led to the establishment of the exhibition of parts as a permanent feature. The remainder of the ten-year period under review was not productive of special features. Cincinnati spoke for the convention for the next year and repeated the hospitality that had been extended at Chicago. There were three hundred persons at the banquet, and the opportunity was afforded to the Eastern and the Chicago builders to become acquainted with the builders of Cincinnati who had forged to the front and had made that city the greatest center for light vehicles in the country.



Coach Used by an Albany Family in Entertaining General LaFayette on His Visit to That City About 1825, Now in Possession of James Goold Co., Albany, N. Y.

At the End of the Ten Years.

Philadelphia a second time asked for the convention, which met in that city when the members were the recipients of old-time and hearty Quaker hospitality. On this occasion various subjects connected with the best interests of the industry were discussed. It was here that the first exhibition of parts was made under the auspices of the association.

Digitized by Google

It attracted the attention of all visitors and aroused the interest of accessory manufacturers everywhere, who saw in this annual meeting a convenient method of placing their work before the eyes of their customers. The membership, by this time, had reached three hundred active and three hundred and fourteen associate members, a total of six hundred and forty-four. The social and entertainment features of this convention were highly pleasing, especially as the $2.00 limit for banquet tickets had been previously recalled.

This closes a hurried and superficial review of the first ten years of the existence of the Carriage Builders' National Association. It reveals a history of high endeavor and advanced ideas. The work done laid the foundation of what has followed. A younger generation has since then come to the front and has taken their places, bringing to their aid an intelligence and capacity and a comprehension of possibilities that are not daunted by panic, or temporary discouragement arising from competitive methods of pleasure travel or commercial necessities.

THE GHOST OF THE ONE HORSE SHAY.

[Written for The Hub.]

"Give us a song!" cried he of The Hub,
"A song of the pioneer;
Of the magical date of the year 'fifty-eight,
A song of the fifty years."

I sat me down and grasped my pen,
I dipped it deep in the ink;
Then I waited there, with my pen in the air,
And indulged in a long, long think.

I must have thought myself to sleep,
Or to death (though I seemed alive);
And I played the host to a genuine ghost,
Of the vintage of fifty-five.

It was in that year, as well you know,
That the deacon's one horse shay
Went to smash on the post, and the old thing's ghost
Stood here by my side to-day!

Then I said to myself, "There are several things
That I've wanted for years to know—
If I don't find them out from this ghost then, no doubt,
It is true I am dreadfully slow."

I dropped my pen and, speaking low,
As befitting a subject tender,
I asked of the ghost to whom I was host,
"What's your thought of a carriage's gender?"

I saw at once 'twas a puzzling point,
For the ghost gave a tremulous wriggle;
Then after a while came the ghost of a smile,
Then the ghost of a gig gave a giggle.

"I've spooked it now for fifty years,
But the question that you ask
I have never yet heard, and my soul is stirred
As I contemplate my task."

Long time in thought the ghost was wrapped,
Then gave opinion true:
"It seems to me that a carriage is 'she,'
And you're bound to think so too

"When you've noted all of the many points
Wherein resemblance lies,
To those creatures fair who are wont to share
Men's earthly destinies.

"See how her skirt above her boat
Its shiny blackness shows;
The while beholding her graceful molding
As down the street she goes.

"She wears no apron, but 'tis strange
That one so trim and neat
In spite of scoff won't take it off
When seen upon the street.

"She's ever fond of out-door sports,
And, spite of stormy weather,
She takes her hounds about the grounds,
And they're always seen together.

"She keeps her hair well out of sight,
But her combs are always seen;
While everyone knows that she weareth bows
By the lights that show between.

"She lives on nuts and bolts her food,
But for this is much admired;
She eats her meals from the dish of her wheels,
And she always runs when tired.

"A spendthrift? Yes, and generally strapped;
Why not, when her sash gets broke?
But there's no use repining. She has brains; her headlining
Equals some men's, and that is no joke.

"Vacation days are naught to her,
For enough of sport she sees
When her hub band plays and at ease she stays
In the shade of her whiffletrees.

"In the fall, when the killing frost comes on,
And it's chill the axle nuts feel;
Her axles she'd rather let some one else gather
While she sits in the swing of her wheels.

"Her collar and pin, and likewise her thread,
She keeps in her axle box;
Her well belov'd laces, her useful card cases,
Just inside her door, which she locks.

"Her fondness for fishing is past belief;
She has fairly good luck on the whole;
And is satisfied quite if she has in her sight
One crab on the end of her pole.

"Her ways are stable, you'll agree,
But beware how her anger you raise;
To the sulks you will send her, and then the off fender
Just takes to her bed any stays."

I came to myself with a sudden start,
'Twas so dark I could scarcely see;
"You ghost, one-horse-shaysy, you'll sure drive me crazy
I'll admit that a carriage is 'she'!

"But there's one thing more I would like to ask"—
And I called for a light, when lo!
I was sitting alone and my ghost was gone,
And O! how I did want to know.

Well, never mind what; the hours had sped,
And I'd wasted my time in dreams;
While the song of the Years of the Pioneers
As far off as ever, it seems.

But I dipped my pen once more in ink,
And quickly did I make note on—
Not all, but most—of those things that the ghost
Of the one horse shay seemed to dote on.

I'm sorry, thrice sorry, oh man of The Hub,
That I slept, and the fault is all mine;
"But the song of the years of the pioneers,"
I will leave that for nineteen nine.

WM. D. GOOLD.

Albany, N. Y.

TO MANUFACTURE WHEELS.

Clarence B. Hayes has retired from the Durant-Dort Company at Flint, Mich., and is launching out for himself. He has purchased the control of the National Wheel Company, of Jackson, Mich. The concern is to be reorganized, its capital increased, and the wheel business developed in all its branches to the utmost limit. R. H. Loveland, who went to Flint with Mr. Hayes, has taken a block of stock and assumed a responsible position. The name of the company will probably be the Hayes Wheel Company, but that is not definitely decided. Both Mr. Hayes and Mr. Loveland are practical and successful manufacturers and taking hold of the National means renewed activity and enlarged prosperity for Jackson.

Digitized by Google

Painting as a Selling Agency

BY M. C. HILLICK



PAINTING has influenced both the making and marketing of vehicles to an extent not usually nor largely recognized. Harking back along the echoless years you find this statement verified in ways without number.

Go down into the musty history of vehicle making, when it was indeed an infant industry, and you will discover evidence indisputable to prove the painter an artisan of influence whose craft is depended upon to serve the purposes of the manufacturers apart from the mere creation of surfaces and the beautifying thereof. What through genius, originality and expert mechanical knowledge, the painter has been able to accomplish in the adornment of the carriage has in an unmistakable and direct way influenced its design and its salable qualities. This fact has not always, it is true, been discerned or acknowledged save by the unprejudiced and the impartial. A half century ago, as the veterans of the craft may recall, it was no uncommon practice to find the builder in consultation with the painter over the possible effect of certain pigments upon surfaces of specified dimensions and form. The unerring fact was then recognized, as it has been recognized during the long roll of years since, that pigments, and their position upon the surface, control to a large degree the effect which the design and outline exerts upon that surface. Color, in other terms, possesses the power to add to or subtract from the general or detailed design of the surface.

The carriage may be of a fashion and design beyond criticism—it may even be a work of art, as carriages so often are—yet its entire semblance of beauty can be destroyed by a wrong choice of colors or an unhappy disposition of them upon the surface.

Colors are not, let us for once and all time admit, subservient to surface design. Manifestly they are influenced by the grace of the fashion of the surface, but to a still greater extent do they in turn influence the original design of the surface.

At the present time, as never before, the carriage manufacturer in company with the carriage painter must have, to be highly successful, a correct appreciation of the relations existing between form and color.

There are any number of surface forms which fail to display the inherent beauty of their outline except when enlivened by colors of exceptional brilliancy. Without the influence of such colors the design must inevitably prove a disappointment. Regular and angular surface forms invariably appear to best advantage when clothed in bright or brilliant colors.

Surface forms in which angularity or regularity are mainly absent bespeak colors of less striking characteristics.

Out of the issues of this law has developed an influence sufficiently potent to constrain the builder to first consider the color possibilities of the surface before actually creating it.

The carriage builder cannot longer be a law unto himself in this matter of designing. The art of the painter, before most other things, must be given a large place in the scheme of surface design. While a certain color might conspicuously call forth the representative features of the design, it might also, at the same time, fail to meet requirements in other respects, as, for example, it could have too much lustre, or too little, or the color might possess insufficient strength of tone, or it might be a color with which no buyer could be on friendly terms.

Thus in this way the influence of colors upon the constructive schemes of the builder, if not admitted as direct, must at least be acknowledged as indirectly subtle and resourceful.

In the making of automobiles, and in their marketing, color influences have played, and are now playing, an important part. In many of the big factories colorists are employed to invent new designs and combinations of pigments alike attractive and efficient in teasing into prominence the artistic contour of the surface. The counsel of these color experts is of supreme moment to the builder who, first of all, is quick to note the fact that in the last analysis color makes or unmakes the real excellence of the surface design.

Manufacturers of the horseless carriage have been quicker to perceive the value of the influence of painting upon the good looks and salable qualities of their products than have the manufacturers of the horse drawn carriage. Naturally this is not an evidence of extraordinary acumen since the mighty strife of competition has moved the manufacturers of automobiles to see with a far vision and to apprehend, as manufacturers have not hitherto been forced to apprehend, the influential factors contributing to the development of the vehicle, chief among which is the choice, uniting, and disposition of colors upon the surface.

The reputation of French builders is based, if we may believe a famous Parisian authority, to at least 50 per cent. upon the painting. This admission coming from eminent source is significant, and explains the prestige of the French painters. What the relations of the latter are with the manufacturer can with a strong degree of accuracy be imagined. Certainly around the French builder's council table one may expect the foreman painter to wield a predominant influence. Men have long marvelled at the completeness of details characteristic of the French carriages. Surfaces, to be sure, have not always displayed the smoothness and the perfection of finish which was their due, but in the field of colors dressed over them, along with brilliancy of tone, and a certain sure suggestion of art, the creations of the French painter are rarely surpassed and not as a rule equalled.

The French carriage builder is a man of details, as is also the trimmer and the painter. And the verdict of their commercial trial balances proves that attention to details wins both in the home and in the American market.

The American carriage builder needs to apply due emphasis to the assurance here given that it is not through any superiority of material, general workmanship, or refinement or charm of design that the French builder has won and artistically maintains his conspicuous position in the fore front of a splendid industry, but rather is his position due to his wonderful success in making the details of his work superior in effect to the general feature of it.

The influence of painting upon the making and the marketing of vehicles is such that the builder and the seller can ill afford to refuse the painter closer relation when new styles and designs are under consideration.

The success of the French builder in this matter is an open book.

In our own land we find the builders of horseless carriages paying homage to the colorist to the extent even of modifying his designs to a style best adapted to set forth becomingly certain original color creations.

And, upon second thought, we believe that the builders of horse propelled vehicles are growing constantly more disposed

Digitized by Google

to first consult the painter before making unalterable choice of style or design.

Certainly the former are daily witnessing irrefutable demonstrations of the power of influence exerted by the painting upon vehicles.

In our city salesrooms carriages are being daily rejected on account of an apparently clumsy and ungracious style, whereas if a different color, or combination of colors, were to be employed the outlawed carriage might find ready sale.

Dealers, and the salesmen in representative city warerooms, are well informed as to the influence of pigments in the warfare of marketing carriages.

Wider recognition of the laws of harmony and contrasts, and the ultimate influence of colors upon styles and designs of surfaces in whole or in part, is a subject for immediate thought on the part of men engaged in the carriage industry.

The expansion of the vehicle manufacturing business, and the general advance made by the trade during the years that have made possible a Golden Anniversary number of The Hub has now reached a point where, if anything, the finer and more graceful novelties both in form and color must be sought for. The adaptation of form to color, and, perhaps we should say, vice-versa, is one of the problems which simply cannot be turned over to the painter for unaided solution.

The builder and the dealer are going to a remoter jury, the vast discriminating public itself is invited to unite in putting into effect this law of equations by virtue of which form and color approach closer to the proportions of real art, and vehicles in general become more marketable.

In making and marketing of vehicles the interests of the maker and the marketer, now having reference to the man who sells to the consumer, are so nearly identical as to suggest a partnership having for one of its chief aims the refinement of both form and color, and the largest possible development of the faculty for attention to details. Into this partnership the foreman painter must be welcomed in the capacity of an expert adviser.

For the future the results of such consultation are written across the horizon in glowing letters, and in the terms of the motto of the Empire State, spell Excelsior.

BUILT CARRIAGES FOR PRESIDENT AND KING.

Builder of carriages for presidents and kings—such once was Gottlieb Kroll, an aged resident of Philadelphia.

He has proved that one may ennoble one's vocation by devoting to it the best energies of his being, by doing his work better than others could do it. Carriage building to him became, from the day he essayed to learn the business, not merely a means of making a living, but an art.

He constructed the catafalque in which the remains of the martyred Lincoln were drawn through the streets of Philadelphia; made a carriage for another martyr president, McKinley; won the commendation of a czar of Russia and a king of Prussia for making court equipages.

Mr. Kroll was born in the kingdom of Prussia, in 1821, and learned the carriage business in a shop at Hamburg, where almost all the crowned heads of Europe at one time or another had carriages made.

Of all the works he did for crowned heads, Mr. Kroll is perhaps the proudest of a brougham he constructed for the then King of Prussia. In this he took particular pride, because it was to be used by the ruler of his native state; and for many years this carriage was pointed out to the youth of the land as an example of what Prussian skill and energy could accomplish.

One of the Russian czars journeyed there from St. Petersburg to personally arrange for an equipage, which Mr. Kroll helped to build.

For upwards of fifty years he worked in his shop in Philadelphia, which business he passed down to his son.

IMPLEMENT AND VEHICLE MANUFACTURERS SOON TO MEET.

Arrangements are being rapidly perfected for the next annual convention of the National Association of Agricultural Implement and Vehicle Manufacturers, which will be held at Columbus, Ohio, October 20, 21 and 22. Inasmuch as Columbus is easily accessible for practically the entire membership of the association the expectation is that the attendance will be very large. The Columbus committees have selected the Southern Hotel as the official headquarters, and the place for holding the business sessions of the convention. The present plan is to go to the convention from Chicago on a special train over the Pennsylvania lines, leaving Chicago about noon of October 19, and arriving at Columbus about 8 o'clock the same evening. While application has been made for a special rate it is hardly likely that any will be granted, full fare on the two-cent basis being exacted. The programme of entertainment at Columbus contemplates receptions and smokers, a ball and a banquet, automobile and trolley rides and such other functions as the ingenuity and hospitality of the Columbus people can devise.

Business sessions of the convention will be held on each of the three days of the convention and from present appearances there will be an exceedingly interesting lot of reports to be made. The programme for the business sessions, which will be announced within a few days, will include other matters of great interest to implement and vehicle manufacturers, and an effort will be made to profitably employ every minute of the time devoted to business.

C. F. KIMBALL RETURNS FROM ABROAD.

C. F. Kimball, head of C. P. Kimball & Co., carriage builders of Chicago, is rapidly recovering from his recent illness, which overtook him in Paris. He arrived in this country the early part of October.

Mr. Kimball left for Europe the latter part of June, expecting to visit the automobile centers of Europe and also make a tour

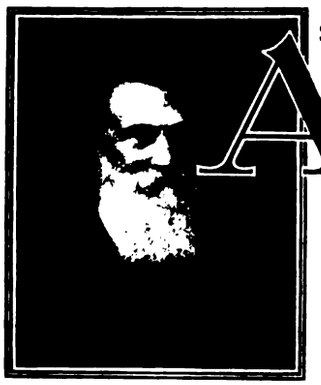


of Italy. While in Paris he was stricken with an attack of acute indigestion, which, for a time, threatened rather serious results, but a long rest in Lucerne, Switzerland, brought about such a marked improvement that Mr. Kimball was able to finish his business matters in Paris and sail for home on his original schedule.

Digitized by Google

British Vehicle Industry Review

By Thomas Mattison



AS The Hub is now commemorating its jubilee of fifty years' journalistic catering to the road carriage and motor carriage industry throughout the world, it will be very appropriate to take a retrospective view of the progressive advance of the trade in its whole bearing contemporaneous with The Hub's life.

The life of a man, the Psalmist tells us with silvered eloquence, is but as a tale that is told, and as The Hub's jubilee is within my own purview as a carriage builder, I will speak of what has passed in practical panoramic order through my own experience and observation.

At Alnwick, in July, 1861, I went to serve a seven years' apprenticeship to coach body making with a firm of carriage builders having a wide clientele, the majority of whom were the elite of the county of Northumberland, while they had royal patrons as well. The quality of work was of the best, and the style largely individual.

During the years of my apprenticeship, and for a good many years afterward, there were no technical schools nor classes to which coach makers could attend for direct, practical and theoretical instruction, as is possible to-day. Science and art classes were the only avenues of a neutral trade character to which apprentices and young men could attend. These science and art educational centres have South Kensington as their base and where the pass certificates are issued after the annual examinations are held.

It is a system of afterwork artisan education, that was brought into practical use by the late Prince Consort, but it falls short of the direct needs of workmen, though it of course tends to quicken the eye and strengthen the brain, but it leaves the workman to apply this abstract teaching to his own work, and on his own initiative, instead of applying the science and art studies directly to that which will do him and the industry at which he works a lifting help, and not only a help individually, but a kneading help to leven the whole manufacture in which he may be engaged.

At the time of which I speak, gigs had gone out of fashion, and the two-wheeled dog cart taken its place; but it must not be forgotten that locality has a great deal to do with a style of vehicle, for what is in demand in one part of England cannot be given away in another.

The two-wheeled dog-cart was made on taking lines, while it was roomy for carrying light market luggage. It carried four riders, which was a great advance in convenience and carrying power, while labor to the horse was only slightly increased. The balance had to be adjusted for the shafts just to hang in the backband of the harness, to prevent what is termed "knee motion," but which is really a fancy name for defective coach making.

At this period there was a great demand for low four-wheeled basket bodied phaetons of very light and pretty design. They were first introduced by Messrs. Zennie, of Croydon, who made a specialty of them. These smart little carriages had a good innings.

The International Exhibition, held in London in 1862, gave an impetus to the trade in the matter of invention and design, as a result of contact with compeers of home and foreign rivalry. The four-wheeled dogcart was very popular at this time, and received an impetus in the design brought out by Bellvelette, of France, whose design had a raised boot in front, and the hind seat on a line about eight inches below it. The heightened position of the boot gave a greater command to the driver over the horse, and lent an ennobling effect to the carriage.

From 1861 up to 1870 wagonettes were a favorite carriage with country gentlemen with families. They were also the objective and subjective field for the inventor in the manner of seating movements. Those of the stanhope type were made with the seats to be used as a wagonette, and to take off, and one of the seats to be fixed to provisional fittings, which allowed the carriage to be used as a stanhope phaeton.

The stanhope phaeton was also very popular at this time. It was an aristocratic looking carriage and made itself a most formidable rival to the mail phaeton. The wagonette suggested the designing of the bus wagonette, which was made with a removable head, or with the head as a fixture, which in this formation has remained with us until to-day. At the time of its introduction and wide usage it was a heavy competitor with the brougham, but as things have settled down to their direct bearing, there has been found plenty of elbow room for both in public favor.

In light two-wheeled carriages, suitable for ladies driving out with, a wide field was opened out in building this style of cart. Messrs. Hutton of Dublin specialized a cart of this kind, which they named "The Croydon," and finished in natural wood, and readily purchased by the elite and nobility of Ireland.

I cannot, in my experience, think of a two-wheeled car to which King's "Battlesden Car" had so near approach as to Messrs, Hutton's "Croyden Car." It occurs, however, in the designing of things and in inventions, that two minds will be centered in bringing life to the same thing, and this phenomena in the annals of carriage building is no exception.

The Battlesden Car, brought out by King, had a very wide patronage and catered to the wants of those living in the country, and within a few miles of a town or railway station. The car was built on very elementary principles, but strong, and had its shafts fixed on fulcrum bearings and relief springs behind—a correct method.

The Whitechapel Cart, which was built with a framed body, the framing being chamfered and the body panelled up on the inside, came as a change to the dogcart. It provided a longer body than the dogcart and was more roomy for carrying luggage and while the hind body of the dogcart was that of an acute angle to its bottom side, that of the Whitechapel was an obtuse angle, which curtails the necessary advantage of leg room when the door is down and the cart balanced for four riders.

From 1861 to 1878 there were many changes in the designs of two and four-wheeled carriages, and without doubt the international exhibitions held throughout the world had their effect in bringing this about in a large degree. These courts of set rivalry are the means of introducing improved types of similar carriages, but during my whole experience there has not been produced one single carriage that will live the life of the brougham, the landau, the barouche or the Irish jaunting car. They have been sliding compositions, possessing points found in other vehicles in the same plane, but there has been no new birth. We have had conversions and adaptations in plenty, but that is all.

The Paris Exhibition of 1867 was responsible for the introduc-

Digitized by Google

tion of the Parisian phaeton, which, with the basket phaeton, entirely displaced the park phaeton and the village phaeton, too, as a lady's carriage. The Parisian phaeton ushered in a period of angularity in design, which hung over the trade like a dense fog for some years.

Though there is not much beauty obtainable from straight lines, still, it was a change from the serpentine curves in which the basket and village phaetons had for so long held the field. Angularity became a predominating feature in design, and permeated every style of carriage where it could be employed to show a change in harmony.

In the matter of two-wheeled work of every design, angular lines were the chief and governing feature, in the body and under gearing. The scrolls of two-wheeled work were forged on the angle and swaged to an oval surface. This style of work looked very well, but a scroll that is forged from round bar has a uniform strength from every point, while a scroll forged on the angle and swaged to two strengths is only strong in its one and direct position to the weight it is conveying in deflecting the springs; hence, they many a time failed towards the spindle end and bent, and they also gave way at the root neck through imperfect welding to the L foot.

In brougham design, the angular lines were used to very pleasing effect. The introduction of the short bottom side on the hind bottom quarter of the body, made a taking departure to the continuous corner pillar and bottom side curve line, which had controlled brougham design for so long.

The short bottomside, which was a faint curve, made a break in the back outline of the body, and thus in a striking sense killed the monotony of the governing line of the quarter. The boot was also cut up in its surfacing with angular lines where curves were thought to be out of harmony. The elbow line of the hind quarter was made with a faint curve at the corner pillar, and ultimately they were made straight. Landaus were subjected to the same lines, wherever they could be employed, instead of curves.

The "Peters" and "Barker Broughams" are pre-eminent in this characteristic, and it will perhaps be of more than passing interest to give a photographic view here of the first brougham which was built by Messrs. Cook & Robinson, of Mount street, London, in 1838, to the instructions and order of Lord Brougham.

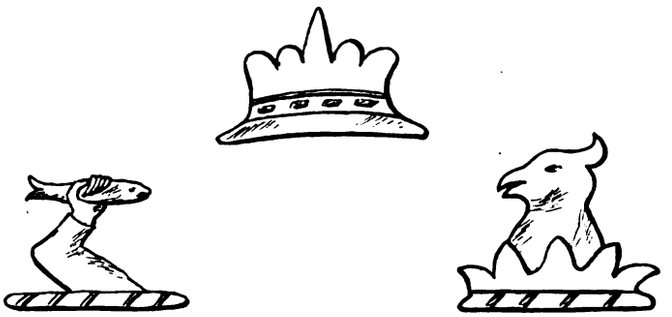


The First Brougham.

It will be seen how the lines of the brougham have changed from the first body, through the decades since its birth in 1838 up to the present styles.

From 1867 to 1878 self acting spring heads for landaus came prominently into use. These accessory helps were an acceptable improvement, which the public readily appreciated. The principal heads in use for some years were McKenzies, Harrison's, and Rock's patents. They all worked the cant-rail flaps through the side joints. Offard's patent was also widely used. Messrs. Offard were the first to use inside joints in conjunction with the spring mechanism. However, a landau without side joints has a bare look, but, for all that they are very widely made in this way now. The improved mechanism in automatic head fittings, together with strength of the spring, are quite sufficient to lift a landau head up to position, so that side joints are quite unnecessary. Spring heads would have been incomplete without improved head locks.The old locks held the flaps in position from the top of the head, but were most ungainly, and inconvenient to get at to open and close the head. Inside locks are a great advance, while their neat size and polished surfaces make them an artistic furniture fitting which harmonizes well with the trimmings. Messrs. Morgan and Messrs. Fuller were the first inventors of self-acting landau heads.

This was also a period of change of form in the design of springs and law-suits thereon. A combined elliptic and C spring



Double Crest on Each Door of First Brougham.

was brought about by Messrs. Morgan, of Long Acre, London, and the ease claimed for it, together with its elegance of form, brought the firm extended business. The spring yields a very easy motion, but its construction is quite contrary to the teaching of the law of mechanics, as its action produces unequal leverage, which is more apparent on an under works, or on a two-wheeled cart, than on a landau, where its defects are concealed.

This is not applicable to Messrs. Morgans' spring only, but applies equally as well to all of these hydra productions, which time has shown to be false in their construction, hence the reversion to the elliptic and grasshopper design of spring, which are the only true formations for the reception of vertical weight.

On two-wheeled carriages the C and grasshopper combination were largely used as a result of the Paris Exhibition of 1878, but as matters of trade they have gone to the scrap-heap. The C spring barouche was in its last throes of fashion during my apprenticeship years, as was also the Clarence, which the brougham as a closed carriage succeeded.

The cab phaeton also went out of fashion at this time, but was subsequently revived through Her late Majesty, Queen Victoria, purchasing a similar carriage at the Vienna exhibition. The Queen's patronage gave a flip to fashion, and this carriage, in many alterations of outline, has remained with us since then.

In 1885 the inventions exhibition was held in London, but the most striking carriage in the whole exhibit, both in design and suspension, was a double-perched victoria mounted on C springs. It was a most beautiful production of the coach makers' art, and revived a style of hanging peculiar to old time work, as seen on old state and family carriages.

The designer and inventor of the exhibit was Mr. Lawton of Liverpool. The carriage showed a strange reversal of things, for while Mr. Lawton's invention caught on, the C spring barouche, of which Messrs. Zaurie & Warner, of London, were the famous builders, had gone completely out of date. An improved carriage brake was shown at this exhibition by Mr. Mortimer, who was the first prize winner in the competition for an improved carriage brake, given by the late Mr. John Philipson, of Newcastle-on-Tyne. The brake never got beyond its initial state; it took its bearing on the back of the hub of the

Digitized by Google

wheel, thus throwing its force on the flange of the gullet of a collinge axle, for which it was adapted.

Up to this time the Forder hansom cab, as a distinct hire vehicle catering to the public, held the premier position, but is now, through the trend of change, a weakened branch of carriage manufacture.

From 1855 up to 1895 there was no striking change in style or in invention that calls for special comment, and the trade, in the language of a drill sargeant, stood at "attention."

Advent of the Motor Car.

The year 1896 was a red letter year for the carriage building industry of England, because it was in November of that year that the use of the motor car was legalized and the hands of the trade unfettered. This was brought about through the advance of the motor car by the French as a road vehicle, and promised a new field for carriage building and engineering enterprise. To enable English coach builders and engineers to participate in this advance, the speed limit of self-propelled vehicles had to be repealed and the law brought up to date by special act of parliament.

The advance of the motor car in public favor hung fire for a while. This was because of the intense ugliness of the design of the bodies and of the incomplete traveling power of the engines. But carriage builders held aloof from the new comer, until the more advanced in the trade took the building of bodies in hand, and as the coach builders' work was gradually unfolded to the public gaze in smarter designs, the industry began to make rapid strides. But all this was not accomplished without someone coming to grief, both financially and literally.

The principal carriage builders throughout the trade now vie with each other in the matter of motor body building, and it is entirely owing to the ability of the carriage builder that the motor car has reached such a high state of perfection to-day, and it goes without saying in the future road carriage building and motor car construction will march hand in hand and side by side to each other's advantage.

In the matter of trade journalism there was in 1861 "The Carriage Builders and Harness Makers' Art Journal," which was contemporary with The Hub. It was a journal conducted with some ability, but it had a very short career and ceased to exist after a brief life of three years. Its art drawings were made by T. C. Calliford, a most talented carriage draftsman. The lines of his drawings were so full of elegance and sweet formation that in this special work he stood alone as the finest draftsman in Europe. Since that time the trade has been catered to with more or less success, and has now a large choice of weekly and monthly trade journals as literary and practical digests.

Technical Education.

Technical education in carriage building has been looked after with great zest by some of its more ardent spirits. In 1851 Mr. Mather, of Newcastle-on-Tyne, a workman in the employment of Messrs. Atkinson & Philipson, of that city, bought out and published the "Cant Board Arranged," which did good work and was a most creditable and exemplary effort to help his fellow workmen throughout the country to understand carriage body construction in a systematic way.

Technical classes were first formulated in Newcastle by the late Mr. John Philipson, and then Henry Angus & Co. They did not stop at the classes, but also wrote books and gave most instructive lectures for the students' guidance. Sir William Angus has given most signal help in this way, while Mr. Philipson's sons have also written valuable books and papers bearing upon the industry. The Coachmakers' Company has an annual competition in carriage drafting, which is open to the whole trade. This is an excellent institution in creating an emulative spirit throughout the trade, but it has the appearance of being one sided in the distribution of its prizes. This shadow should not exist. The prize decisions should be like Caesar's wife, above suspicion.

The coach makers' technical classes in London were established through Mr. G. N. Hooper and the late Mr. G. Thrupp. They, with others, also founded the Coach Builders' Benevolent Institution, a noble work.

The Institute of British Carriage Manufacturers, a similar institution to the C. B. N. A. of America, has under its care the carriage building technical classes, which are in London, and looks after the broad interests of the trade.

The City and Guild's Institute holds annual examinations on road carriage building, this section being under Mr. Chas. Holmes, head of the eminent firm of Holmes & Co., carriage builders of Derby and London, who is the official examiner. While these examinations are of the first value in raising the intellectual status of the workmen and vesting him with a proved ability, still the teaching should also be directed to the improvement in the style of work for which a locality is known, and thus help to bring immediate improvement to it.

These institutions were brought into being by men imbued with the spirit of "never being weary of well doing," otherwise they would have foundered by the way. They have sought most unselfishly the betterment of their kind and country.

The future is to those who are in a position to grasp it, and workmen who are trained to meet these openings, as they are sprung upon us by invention, will be those who have had their practical teaching strengthened through a technical training and the growing advance in motor body design will call for all the ability in this direction that can be found.

In a cursory paper one must of necessity leave out a deal that one would like to speak about, but space will not allow of my doing so. In the future advance of the trade The Hub, I feel sure, will always be in the van, and its aim run in the groove of the lines of Marlowe:

"Our souls, whose faculties can comprehend
The wondrous architecture of the world,
And measure every wandering planet's course,
Still climbing after knowledge infinite;
And always moving as the restless spheres,
Will us to wear ourselves, and never rest
Until we reach the ripest fruit of all."

REGARDING ASSOCIATE MEMBERS OF C. B. N. A.

The third annual convention of the associate members of the C. B. N. A. will be held in Chicago, Wednesday, October the thirteenth. The meeting place will probably be in the hall of exhibits of the C. B. N. A. at the armory of the First Regiment, Michigan avenue and 16th-street. It is hoped that this meeting will be considered of importance and that those interested will give it an hour of their time during the convention.

All contributors to the entertainment fund are considered as included in the membership without further ceremonial, and are requested to be present. The finance committee appointed to raise the fund will give an account of its stewardship, and helpful dscussion will be welcomed as a means of perfecting means of raising money for entertaining members of the C. B. N. A., and put it on a permanent footing, if it is thought to be a desirable thing to do.

The association must select a member from among its number to serve for two years on the executive committee of the C. B. N. A. It is also the appropriate time for all suggestions looking to the promotion of the interests of the Associate Trades, not only in relation to their connection with the C. B. N. A., but as to their relations one to another as an integral trade organization capable of being made effective for the general weal of members. An association to be useful should be used.

Associate members will be notified in Chicago of the place and hour of meeting which will be held on Wednesday, October 13.

Members should think in what way the association may be made to serve their interest best, and come prepared to make their ideas a force for good to themselves and associates.

Digitized by Google

PROGRAM OF C. B. N. A. CONVENTION.

Following is the official announcement of the program of the thirty-sixth annual meeting of the Carriage Builders' National Association in Chicago, October 13, 14, 15.

Tuesday, October 13th.

It is the desire of the president and committee that the proceedings should open promptly at the hour named.

And to this session all the ladies visiting the convention, and also those of the members of the local committee, are most cordially invited to attend.

Meeting will be called to order by the president.

Address of welcome.

Responses on behalf of the association by Mr. Maurice Connelly, Dubuque, Iowa, and Mr. P. R. Doherty, Flint, Mich.

Address by the Honorable Martin B. Madden, Chicago, Ill., on the "Improvement of the Waterways of the Country."

Opening address of president of the association, J. D. Dort, Flint, Mich.

Nomination of president for the ensuing year.

Appointment of a committee on resolutions.

Appointment of a committee to recommend officers for the ensuing year.

Appointment of a committee on the exhibition.

Appointment of the obituary committee.

On this Tuesday evening, October 13th, the reception to the members and ladies will be held at the Auditorium Hotel, from 8 to 11 o'clock.

You are all invited to be present.

Wednesday, October 14th.

Meeting will be called to order by the President.

Report of the Executive Committee, Mr. John Hassett, Amesbury, Mass., Chairman.

Report of the secretary and treasurer.

Address by Hon. Nahum J. Bachelder, Concord, N. H., Master of the National Grange, on "The Demand of the Farmers for National Aid for Highway Improvement."

Report of the Committee on Good Roads, Henry F. Keachline, Philadelphia, Chairman.

Address by Dr. Thomas E. Will, Secretary American Forestry Association, on "The Conservation of our National Resources."

Report of Committee on Fire Insurance, Mr. H. E. Miles, Racine, Wis., Chairman

Report on the Timber Supply by Mr. O. B. Bannister, Muncie, Ind., Chairman.

Report of the Trustees of the Technical School, Charles J. Richter, New York, Chairman.

Report of Committee to Recommend Officers.

Election of President.

Thursday, October 15th.

Meeting will be called to order by the president.

Address by C. B. Morrell, Sheldon School, Chicago, "The Science of Business Building."

Report of Committee on Freight and Classification, Mr. Theo. Luth, Cincinnati, Chairman.

Report of Committee on Abuses in the carriage and accessory trades, Perrin P. Hunter, Cincinnati, Ohio, chairman.

Report of Committee on Improving the Waterways of the Country, Mr. Z. Taylor Rickards, Philadelphia, Pa., Chairman.

Report of Committee on New Members, Warren D. Oakes, Indianapolis, Chairman.

Consideration of the Report of the Executive Committee.

Unfinished business.

New business.

Election of officers.

Report of Committee on Resolutions.

Report of the Committee on Exhibition.

Report of the Obituary Committee.

Selection of the place for the next Convention.

Adjournment.

Annual Banquet.

Tickets for the banquet can be obtained from the secretary in Chicago.

At the last annual convention, held in New York October 9, 1907, a resolution was passed "that the Secretary be required to charge for all extra tickets the cost of the same per plate." As this banquet will cost within a fraction of $8 per plate, the extra ticket will be $8 each.

This does not concern the members' own tickets, as they are all entitled to one ticket free. Only applies to the extra tickets any one may wish to have. Please note this, so there will be no misunderstanding.

For the accommodation of the members of the association, the secretary will be at the exhibition hall on the afternoon of Tuesday, Wednesday and Thursday, from 2 until 5 o'clock, for the reception of new members, giving out banquet tickets, and such other business as may be required of him. The members are earnestly requested to procure their banquet tickets as early as possible, so that we can tell who will be present at the dinner.

To prevent mistakes and misundertsandings, the executive committee has adopted the following rule: "Members of the association who desire their representatives to use their banquet tickets must give an order for the same in writing to the secretary.

INVINCIBLE SCHACHT.

In referring to the model K motor carriage built by the Schacht Manufacturing Co., of Cincinnati, O., the builders say it is a wonder in a hundred ways. One of those twentieth century productions that cause people to sit up and take notice.

In describing the vehicle illustrated herewith it is claimed that



the model K is good for any speed up to thirty miles an hour. It is equipped with a 16 horse-power friction drive motor and is in every way a practical and serviceable vehicle. All parts on the model K are interchangeable and thoroughly get-at-able. Dealers looking for agencies on a live proposition can learn more by writing the builders of the "Invincible" model K.

JEWEL SPECIALTIES.

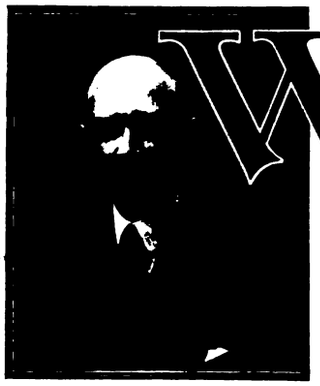
Cleansers, dressings, enamels, lace dyes, body polishes, etc., make up a line of specialties manufactured by the Jewel Mfg. Co., of Chicago, Ill., for carriage and automobile builders and dealers. The Jewel exhibit is always an attractive one at C. B. N. A. conventions and they will have some very useful souvenirs for both the ladies and gentlemen who call at their booth during convention week.

On the subject of cloth and leather preservation, they are experts. The trade should meet H. C. Nelson at the Chicago show and hear his story.

Digitized by Google

AUTOMOBILE ARCHITECTS

By Frank P. Stone.



WHAT is an architect? Briefly defined by lexicographers an architect is a planner or designer; a maker of buildings, etc.

As there are naval architects, why not automobile architects? If the naval architect is found to be of benefit to humanity, because of man's warlike disposition, will not the automobile architect be of benefit to mankind in his pursuit of pleasure. But where will the automobile architect learn his lesson and who will confer his degree?

As a graduate of some college at 21 he will have had a degree in engineering and architecture because of his knowledge of the authorities in book form. But not as the graduate of the university at 21 but rather as the graduate of the universe at 71 will he attain his real degree, because the allotted time limit of life is the latter age and the university of knowledge is the life universal, the course of instruction being confined to the two schools of observation and experience, the former comprising the knowledge of his university, the latter of his universe.

The automobile architect must possess practical knowledge of mechanical arts and be able to adorn the artisan's achievements with artistic embellishments, for mechanics are not artists while artists are not mechanical in their ideas. The former is realistic, the latter, idealistic, while the architect must be both. We may, therefore, well ask in kindly consideration for the sentiments of both those who think and feel for the happiness of humanity—where do those natural laws of labor begin and end?

In the evolution of the automobile architect the mechanical instinct first appears. He learns how to harness up the engine to the axle of the wheeled vehicle; he applies the power that the engineers have discovered exists in steam, oil and electricity to a carriage that adds to the renown of the motor-maker. In his delight he sees the wheels spin around and his egotism leads him to think that he has learned all his lessons. He is ignorant of the fact that to the inventor of rubber tires his success is due. Take away the rubber tire and the automobile for pleasure would forthwith disappear. At this stage of his evolution he is so exalted over his mechanical ability that he will not take time to learn what the ancient Assyrian and Egyptian learned about carriage construction and recorded in hieroglyphics upon their monuments thousands of years ago.

Few engineers to-day could define the difference in construction between a wheel designed for a shaft, a wheelbarrow or a chariot, much less devise a wheel that would do the work of the chariot wheels of those ancient days or design or properly proportion a spoke or hub or rim, which, when put together, would possess the requisite strength to stand the strain incident to their use, while to add style to the various parts of the wheel is a matter of long continued cultivation on the part of the wheelwright, admitting of great variety of detail in proportioning and in beautifying, knowledge that must be attained by the successful coach builders of every country.

As the wheel is fundamental to the carriage I cite this illustration which applies equally to the construction and style and set or swing of the axle and to all other parts of the carriage great in number and variety.

Had the automobile engineer possessed the knowledge of the carriage maker in the application of springs to his machine, the purchaser would often have been saved the expense and discomfiture incident to this lack of knowledge, for I have not yet seen a single instance of proper attachment of springs to vehicles among manufacturers of automobiles in this country. Wanton disregard of all fundamental principles of suspension of vehicles has been displayed from the outset by automobile manufacturers where ease of riding and ease of draft are essential requisites.

These few illustrations I think sufficient to show the extent and importance of the ground covered by carriage constructors since the days of the Pharaohs and should teach the automobile architect that he has much to learn from the ancients before taking up the study of his art from mediaeval or modern carriage makers, for, having learned how to construct a carriage, he must devote years of time to designing them, for any draughtsman can draw, but few can design. The art of designing consists in combining lines harmoniously. The good designer, therefore, is a good artist, and harmony is as essential in lines as in notes or colors. The designer, musician and painter depend alike upon harmony as the fundamental factor underlying their respective arts.

The automobile architect who would create good designs must therefore necessarily study harmony in lines, and in the application of the fundamental laws of design, the simple styles far surpass in beauty and elegance the more complicated ones when the latter are not the product of a real genius. As an illustration let us look at the seven orders of architecture. As we compare the doric with the ionic or corinthian, how few there are who possess the power of knowledge to choose correctly the greatest creation of genius embodied in these three orders. Those who have studied them must concede that the greater genius created the most elaborate combination of lines. A full orchestra surpasses a few instruments.

It is said that a genius is born, not made. In testing this truth we have but to point to the masters in music, painting and sculpture and to those in the mechanical and the mercantile world.

That the genius in automobile architecture is yet to come is quite apparent. To the carriage constructor it is equally apparent that had the manufacturers of automobiles of this country secured his counsel and advise and profited by the benefits of his experience and observation, fully 75 per cent. of the many millions of money that has been expended in its experimental stages would have been saved by investors in the automobile industry, while greater advancement in the art, from an artistic standpoint, the lack of which is evident to the most superficial student of vehicular history, would have been made.

Not until there is a complete divorcement of the motor manufacturer from the carriage constructor and the advent of the automobile architect can the automobile industry of this country compare favorably with the European countries, unless the carriage builders gain control of the industry, for in no sense does the automobile differ from the carriage except by a substitution of motive power, which is a recognized fact by the motor makers of the old world, whose stationary and advertisements state that they are builders of motors for boats, balloons and various kinds of vehicles for business and pleasure purposes. Foreign builders of automobiles prefer that their patrons purchase their automobiles through their carriage builders, knowing that the the art of carriage building alone comprehends the knowledge and skill necessary to correctly construct comfort and durability, combined with variety of design, style and finish.

Digitized by Google

Unquestionably the future of the industry of this country lies in the development of the automobile industry along the same lines as the carriage industry, which includes the carriage manufacturer who adopts certain styles and reproduced them in large lots as distinguished from the carriage modeler—to use a term applied in the arts—who builds a model of a machine or who models a work of art in clay or marble. A MacMonies or Rosa Bonheur can create a work of art with chisel or brush which can be reproduced by the moulder and printer at a price that meets the demands for the multitude unable to appreciate, if they are willing to pay the price for an original work of art. Likewise in the building business 40 years ago, one to be in fashion must have a house builded after the same design of his neighbor, did he live in Boston, New York or Philadelphia, of a style peculiar to each one of those cities; but to-day, if he desires even to build a cottage he must have planned it unlike that of his neighbor in design and finish.

As the automobile builders of this country view the situation, it is evident that they think the carriage constructors are but an incidental factor completely overshadowed by those who build and install the motor. As a carriage builder, I must concede that the apathy of our craftsmen and their neglect of the opportunities that have passed placed them at a great disadvantage in commanding again the patronage that is justly theirs.

It is said that every man is the architect of his own fortune, and it is fortunate for the automobile manufacturers that the carriage architects of this country died with the last generation. However, it is to be hoped that this new agent of the industry will soon appear upon the scene of action to promote the welfare of all concerned; that he should stand aloof from both the builder of bodies and chassis admits of no doubt, if he is to assume the position of architect of automobiles, just as the architect of houses stands aloof from the builder and contractor.

What will constitute his characteristics we wonder? He must make real his ideals in the mechanical and artistic realm of reason and sentiment. He must await the will of the buyer to reach his goal before he can command the builder and dealer to do his bidding. He must be able to minister alike to the manufacturer and merchant in many lines. He must be familiar with the character and quality of every wood that is grown and be able to exercise most discriminating judgment in the use of same. He must be familiar with the character and quality of all known varieties of metal used in construction and ornamentation. His knowledge of fabrics of every conceivable kind used for raiment and decoration, for interior and exterior use, must be exhaustive. He must be proficient in the selection of colors, painting and decoration; able to design himself and make detail drafts as well as to discriminate in designs and pass upon drafts; familiar with the carver's and ornamentor's arts of every kind as they have been employed in the past to give that expression attainable in pleasure carriages, which have been demanded by the aristocracy of all ages as an outward demonstration of wealth and rank, surpassing any other art in the estimation of peoples of all nations. Morally, he will be neither a grafter nor grabber; his aim will be to build his tabernacle upon a triangle of I's; at each angle will be engraved INDUSTRY, INTEGRITY and INTELLIGENCE. The zenith of his ambition will be to reach the apex of its three-part dome called HONESTY; his wealth will consist of knowledge of the world on wheels.

POLES AND SHAFTS.

If eleven years' experience coupled with the latest improved machinery and every other appliance for the production of a high grade line of poles and shafts count for anything, the American Pole & Shaft Co., of Cincinnati, O., believe that their line should command the attention of both carriage builders and jobbers. Not only have they got their own timberlands and branch saw-mills but have also a complete department for ironing up the work. Your correspondence is invited and orders carefully filled.

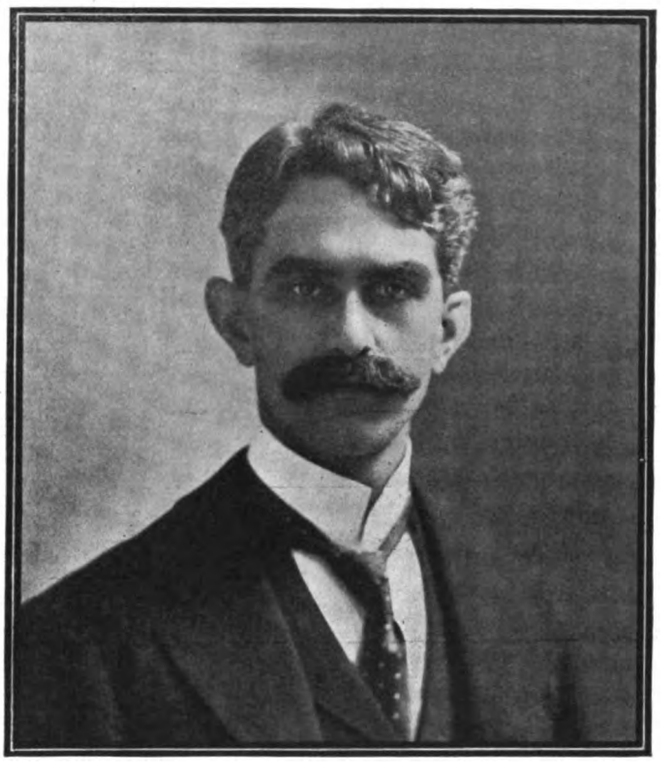
PRESIDENT OF THE C. B. N. A.

In the selection last fall of J. D. Dort for the presidency of the Carriage Builders' National Association, that body again paid tribute to the West and the young men through whose strenuous efforts and sterling qualities large manufacturing plants are established to meet the demands of the users of vehicles throughout this great land of ours.

The following statement recently issued to the carriage builders of the United States, by Mr. Dort, appeals to them to put forth greater effort and advises all to become members of the association, thereby conserving their interests:

"We have all, long ago, recognized the fact that there is a new "Richmond" in the field. The motor vehicle is here, and here to stay. This fact, however, need not alarm us; but whether or no, it will not cease its aggressive and persistent efforts to still farther popularize itself.

"It is daily teaching us a lesson in the "Strenuous Life." It is setting for us a pace. It means that we must get out of ruts and



J. D. Dort, of Flint, Mich., President of C. B. N. A.

work a little harder and a little longer. It means that we must put forth greater effort; that we must concentrate a little closer; take every advantage of time, opportunity and condition, if we are to maintain our standing and increase the volume of our business, and to that end it is essential that we should all meet together at times, to advise with each other and to give effect to such measures as seem best for our general welfare. Such an opportunity is right at hand, and we should all take advantage of it.

"The Carriage Builders' National Convention this year should mark a new era in interest, attendance and membership, and every carriage builder in this country who can possibly do so, should feel it incumbent upon him to attend its sessions and take active part in its deliberations. And still farther, that if he is not already enrolled under the membership of the association, that he make good his interest in the work already accomplished and the still greater work which through it may be accomplished, by at once becoming one of its members.

"I appeal to each one of you that you make this convention your convention; a truly representative one."

Digitized by Google

STATE COACH OF ENGLAND

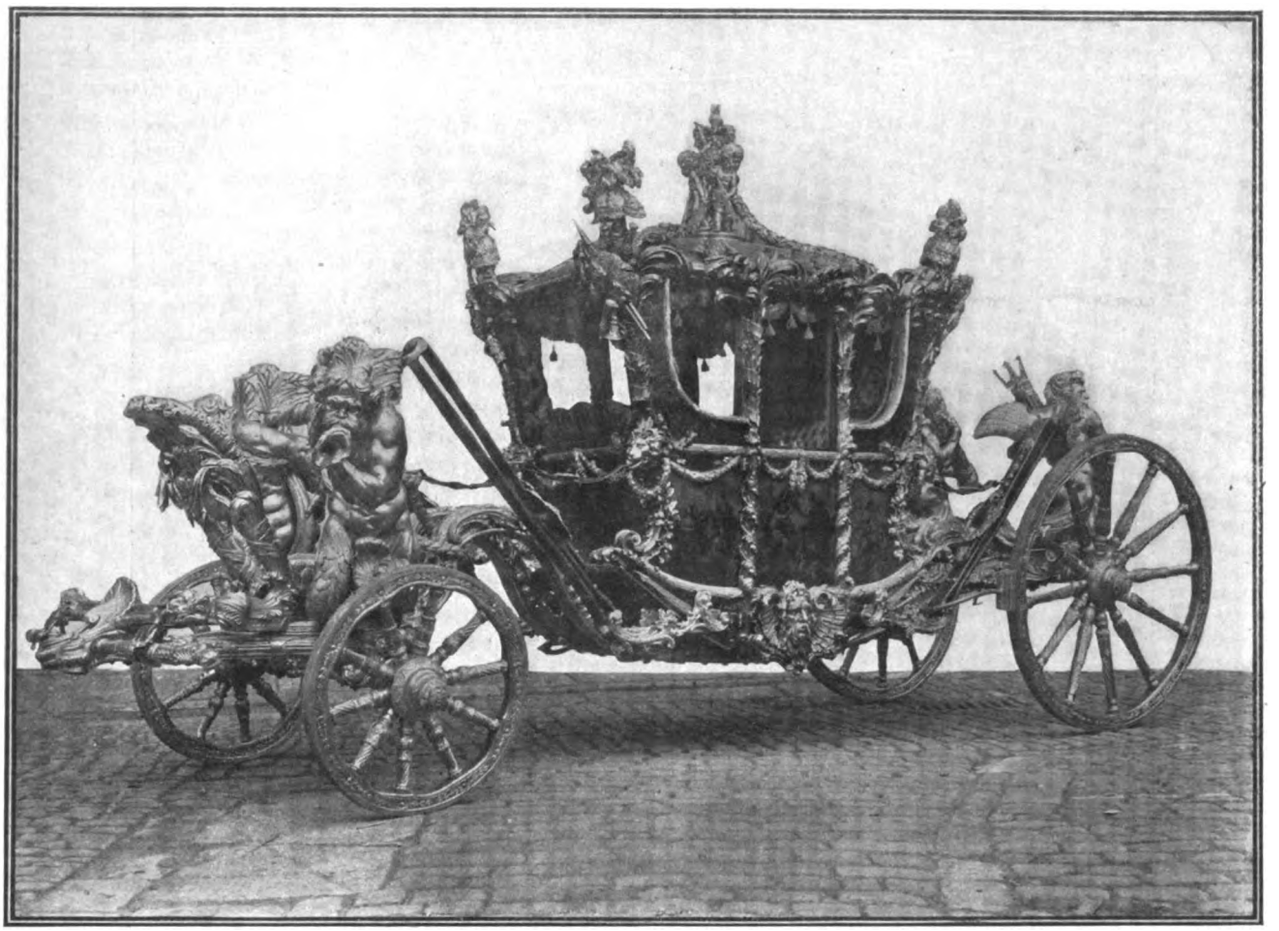
Magnificent Specimen of Coach Makers' Art

THE magnificent coach in which the King and Queen of Great Britain ride annually to parliament is the most interesting state vehicle in existence. It is, moreover, pronounced by experts to be the most superb carriage ever built. Completed in 1761, it was designed by Sir William Chambers, and executed under his direction at a cost of something like £8,000.

Weighing four tons, the coach is 24 ft. long by 8 ft. wide and 12 ft. high. The body is composed of eight palm trees, which, branching out at the top, sustain the roof; and four trees are loaded with trophies allusive to the victories obtained by Great Britain. The trees are supported by four lions' heads. On the center of the roof stand three boys, representing the Genii of England, Scotland and Ireland, supporting the imperial crown of Great Britain, and holding in their hands the sceptre, sword of state, and ensigns of knighthood. Their figures are adorned with festoons of laurels, which fall from thence towards the four corners.

The body is suspended on the undercarriage by four very long leather braces, attached to the shoulders of the tritons at top, and to short and powerful elbow springs at bottom of body. Formerly the extreme length of the braces created an unpleasant oscillation, but this defect was thoroughly remedied by Hooper & Co. in 1901, when they entirely re-upholstered the interior with crimson satin, restored the painting and gilding, fitted a powerful brake to the hind wheels, removed the hammercloth, and generally renovated the equipage throughout. The whole of this work was accomplished in seven days.

The paintings by Cipriana are very rich. The front panel depicts Britannia seated on a throne, holding in her hand a staff of Liberty, attended by Religion, Justice, Wisdom, Valor, Fortitude, Commerce, Plenty and Victory, presenting her with a garland of laurel. In the background is a view of St. Paul's and the River Thames. On the right door Industry and Ingenuity, giving a cornucopia to the Genius of England, are presented, while the panels on either side of the door depict History recording the reports of Fame, and Peace burning the implements of War.



From Photograph Presented to The Hub by Hooper & Co., Ltd., London, England.

On the back panel appear Neptune and Amphitrite issuing from their palace in a triumphal car drawn by sea horses, attended by winds, rivers, tritons, naiads, etc., bringing the tribute of the world to the British shore. The Royal Arms appear on the upper part of the back panel. They are beautifully ornamented with the Order of St. George, with the rose, shamrock and thistle entwined. The left door shows Mars, Minerva and Mercury, supporting the Imperial Crown of Great Britain, while the liberal arts and sciences protected are displayed on the panels on each side of the left door. The whole of the carriage and body is richly ornamented with laurel and carved work beautifully gilded.

Digitized by Google

ANNUAL MEETING OF STUDEBAKER BRANCH HOUSE MANAGERS.

During the week of September 14th, the various branch house managers of Studebaker Bros. Mfg. Co. met at South Bend, Indiana, for their annual conference, when the business of the various branches, their prospects for the coming season, and the requirements of the trade in each section were taken up carefully and discussed in detail.

Among those at the conference were the following general managers: W. R. Innis, president New York branch; E. L. Kuhns, Chicago; Lloyd F. Weaver, Portland; Charles C. Quigley, Salt Lake City; Chester N. Weaver, San Francisco; D. M. F. Weeks, Kansas City; W. H. Hunnewell, Denver, and F. H. Turner, Dallas.

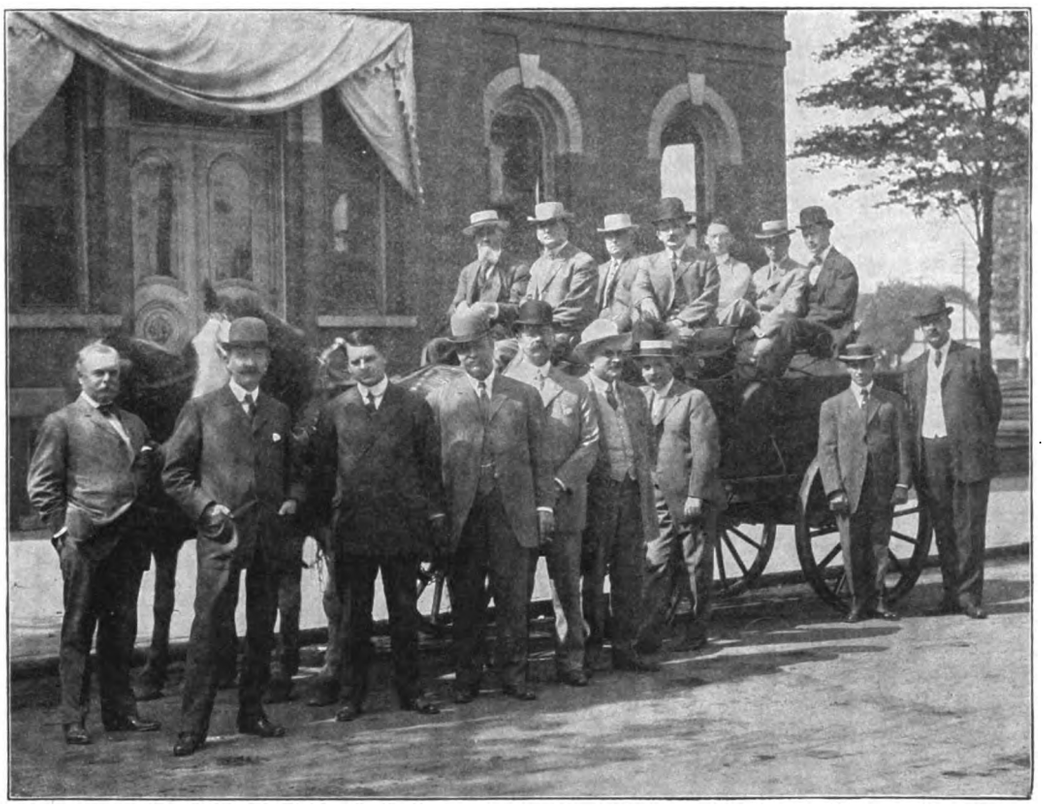
Among others, who were present at this conference, were Hayden Eames, general manager of the Studebaker Automobile Co.; Thad Naylor, manager of one of the Salt Lake City sub-branches, who accompanied Mr. Quigley; T. B. Richards, manager of the San Francisco sub-branch at Sacramento; Bryant Mathews and E. L. Koster, representing the Newell-Mathews Company of Los Angeles, who handle Studebaker vehicles in Southern California; Geo. Keller, the newly appointed sales-manager of the Studebaker Company, of course was present at the conference, renewing acquaintance with the various Studebaker representatives and familiarizing himself with the various branch house conditions.

Some idea of the tremendous influence of the house of Studebaker in the vehicle industry may be obtained from the fact that during the past year, their total sales were in the neighborhood of $12,000,000. It was the opinion of all in conference that the end of the coming year would show a considerable increase in these figures.

Although a great deal of business was transacted, sufficient time was found for social diversion. On Tuesday, Sept. 15th, Pres. J. M. Studebaker entertained at dinner at his beautiful home in Sunnyside, the guests being the Studebaker representatives mentioned above, and in addition, Clement Studebaker, Jr., Chas. Haeske, H. D. Johnson, C. A. Carlisle, J. M. Studebaker, Jr., N. J. Riley, Fred. S. Fish, Col. Geo. M. Studebaker, U. G. Speed, Geo. Witwer, W. B. Pond and C. N. Riley. On Thursday, Sept. 17th, the construction committee of the Studebaker Company, consisting of L. F. Weaver, W. B. Pond, H. D. Johnson, entertained the same party at dinner at the Oliver Hotel. Following the dinner a most attractive list of novel entertainments was presented as a side line at the Indiana Club.

Every branch manager and representative, aside from the great benefit derived in a business way from their week's visit to the home of the Studebaker, agreed that they had a splendid time during their stay at South Bend, and went away with renewed enthusiasm for the business of the coming year and a feeling of greater loyalty to the Studebaker Company.

The accompanying photograph, taken in front of the general offices at South Bend, presents good likenesses of the gentlemen who participated at the above event.



Officers, Including President J. M. Studebaker, and Branch Managers of Studebaker Bros. Mfg. Co.

SOMETHING NEW.

The exhibit of the Shortsville Wheel Co. at the C. B. N. A. show will interest builders, inasmuch as something new in wheels will represent an important part of their display. The new Heath hub possesses many points of merit which will be fully demonstrated by such old wheel experts as Messrs. Heath and Wilson. Be sure and see this exhibit. The Heath hub is illustrated in the company's ad. in this number.

COMPRESSED HUBS.

According to the story of the American Wood Block Co., of Delphos, O., the hub is without doubt a most important factor to the life of any vehicle wheel. To illustrate this point the company has some exceedingly interesting testimonials which they will be pleased to furnish to the trade. "Ideal" hubs and compressed hub blocks is their line.

Digitized by Google

Evolution of the Carriage Industry

General Review of Its Development

TO restrict our review of the development of the carriage industry to the past fifty years, during which The Hub has been in existence, would be to exclude the most interesting portion of vehicledom. But for the present it will suffice to cover this period and to refer to some forgotten details of a more or less local nature, that is local to cities from Boston to Philadelphia. American carriage builders are to-day able to challenge the world in lightness, gracefulness and durability of construction. While improvements have been borrowed from abroad, most of our work is distinctively American.

The first impetus given to carriage building was given when a mail route was established between New York and Philadelphia. The first carriage seen in New York was the curricle. A stimulus to local enterprise was given when Congress, soon after the organization of the Government, passed a law forbidding the "importation of coaches, chairs and carriages of all sorts." As time wore on the building of stage coaches became quite an industry; but some fifty years ago much work came to New York from Connecticut and New Jersey. In fact, a meeting of New York carriage builders was held to see what could be done about it. It seems that New York journeymen would leave and hire out in the small towns in these states, turn out cheap work and flood New York with it. The styles and varieties of vehicles made long ago is surprising. There was a fan-tailed gig, slat-side phaeton, gig chariotee, public sociable coach, C-spring coachee, dickey-seat phaeton, double stanhope, etc. Various types of rockaways arose and had their day. The rising builders seemed to have a surfeit of originally. It was a go-as-you-please era for two or three decades previous to 1850.

The Mexican war and the cession of California opened a new era in carriage building. Wealth became more general. Cheaper vehicles were demanded by the increasing number who desired to possess some visible sign of greater wealth. Numerous patents were taken out for this, that and the other thing. We read of the Everett coupling; a combined spring for sulkies to supplant the elliptic; Oliver wheel of peculiar construction; the complex axle and box invented by Collinge; a new mail axle, air tight and noiseless, excluding dust, etc.

Introduction of New Vehicles.

Next came the Concord wagon; the New Rochelle wagon, originally hung without springs; then the Fenton Rockaway with no door in the side quarter but with a turn-over seat in front.

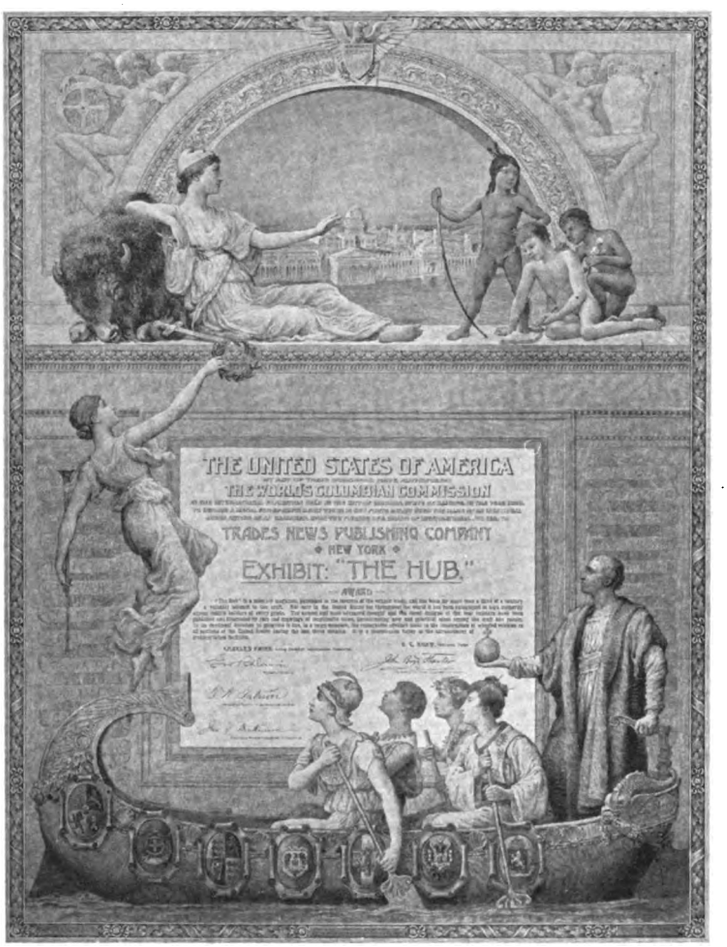
A two-wheeled pony cart made its appearance and which took the eye of the public. The axle tree operated through the body by which it was made to hang very low and therefore popular with the ladies. This was too hard on the horse and was supplanted by the pony phaeton. To meet a growing demand the Brewsters brought out the gentleman's road buggy which jealous builders called a "coal box," but it took.

The six-seat Rockaway soon after came in and met with favor. This was followed by the Clarence coach with a rounding front, a very desirable coach for narrow streets. The caleche which attracted attention for a few years gradually gave way to the landau.

The circular carriage drive around Central Park completed in 1864 helped our industry and a demand arose for cut-under Rockaways, gig phaetons, canoe phaetons, circular front coupes, Bonner buggies, landaus etc. Coupes became popular for shopping purposes and some builders made a hit by combining the coupe and Rockaway, the back being coupe and the front Rockaway. The Bonner buggy for years had quite a sale; the sides and ends of the body had more flare than usual and was a Brewster idea.

Many of these ephemeral designs had their day and disappeared. In buggies, the Jenny Lind and the coal box went down before the square box. The landau held its own because builders gave it more attention. One improvement that served to increase its popularity was the arrangement of the door above the belt-rail by means of which the glass window was protected when lowered and supported when raised.

Columbian Exposition Award



"The Hub" is a monthly magazine, published in the interest of the vehicle trade, and has been for more than a third of a century a valuable adjunct to the craft. Not only in the United States but throughout the world it has been recognized as high authority among vehicle builders of every grade. The newest and most advanced thought and the latest designs of the best builders have been published and illustrated by cuts and drawings of inestimable value, disseminating new and practical ideas among the craft and people. To its continual devotion to progress is due, in a large measure, the remarkable advance made in the construction of wheeled vehicles in all sections of the United States during the last three decades. It is a conspicuous factor in the advancement of transportation facilities.

Digitized by Google

It would be tiresome to follow all the details of improvement and all the modifications through which the carriage building art passed during the past fifty years. A volume could not do justice to it. Only a few general and summarizing observations can be made. Ingenuity ran wild in the earlier portion of this period. Extremes and excesses were mistaken for originality. But the fault was not the fault of the carriage builders. The cause was the general acquisition of wealth.

The Civil War multiplied millionaires and made a large number of people able to live in comparative luxury. Wealth centered in New York and other large cities. The desire for display seized all who could afford display. The carriage industry profited. It made what people wanted or imagined they wanted. Foreigners criticized our taste and sometimes reflected on the carriage builders. But the builders were merely keeping the pot boiling. It was a peculiar period and condition —that between 1860 and 1880.

The industry did not loose its moorings; the draftsmen had not lost their fine sense of art and its requirements; oddities began to drop out of sight. Good taste and fine discernment soon asserted themselves. Bad taste was laughed off the boulevard and the park drives.

Automobile Strengthens and Ennobles the Art.

The new enemy, if such it be, that has confronted the vehicle industry has only served to strengthen and in one sense ennoble the art of carriage construction. Builders are gently and sometimes almost secretly getting into line with the automobile. Those who are relying on their carriage business are producing finer and better work, introducing as far as they can, automobile features, especially with reference to wide and comfortable seats. There is room in antomobiledom for all the carriage building taste and enterprise that sees fit to enter. The statistics of carriage building also show that despite the so-called inroads of the automobile, the balance sheet is in favor of the carriage builders. The automobile industry is settling into fewer hands. Automobiles, such as motor buggies, are increasing in number, cost of manufacture is wedging downward, mechanical facilities are improving and skilled labor is more easily to be had and possibly in the near future, at less cost.

The great carriage industry is still great and is full of great possibilities. The ratio of people who can buy a buggy or a runabout is increasing much faster than the ratio of those who can afford a self-propelled vehicle. This is an important fact to be kept in mind. And again, the number of people who are residing in suburban sections is increasing much faster than the increase in cities—that is of possible vehicle or automobile owners. The riding habit or mania is growing. Good roads and fine drives are magnets to draw vehicles and automobiles. The dark days of the vehicle builders, if they have had any, are over and the spread of wealth will open a wider market for their handiwork.

BOLT CLIPPER.

In every line of manufacture is to be found articles that are recognized as the best, which means that the article is accepted as the standard for comparison. In bolt clippers there are two best, the "Easy" and "New Easy," the product of H. K. Porter, of Everett, Mass. Porter is not only a pioneer in the clipper



business, but one of those progressive geniuses who is always striving to attain the goal of perfection, which is so well illustrated in the "Easy" and "New Easy" bolt clippers. No carriage, wagon or smith shop has a complete set of tools unless a genuine Porter clipper is a part of the kit.

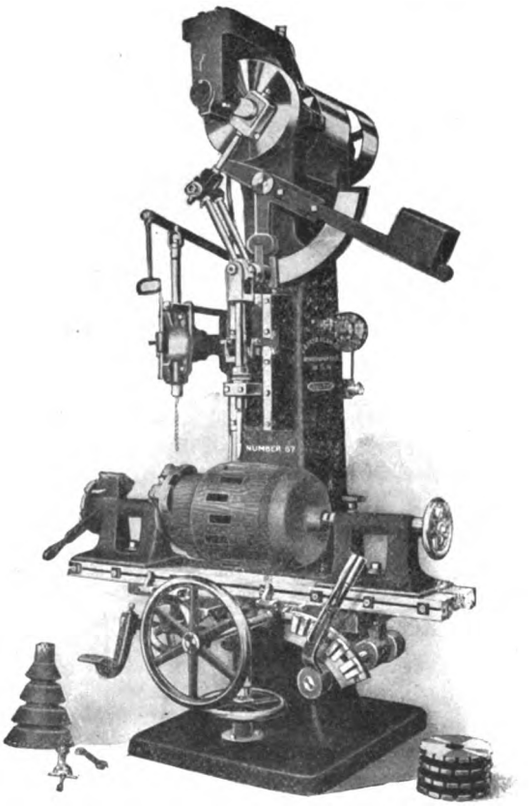
There is never a doubt about the merit of the "New Easy" when the jaws take hold of a bolt. It finishes the job in a clean and business like manner. H. K. Porter recently purchased the Allen-Randall line of bolt and rivet clippers. Turn to the Porter ad. in this number, as it illustrates the various styles more completely.

AN IMPROVED HUB MORTISER.

The machine shown in the accompanying illustration is made by the J. A. Fay & Egan Co., 502-522 West Front street, Cincinnati, Ohio, and is one of the strongest mortisers for its weight now made. It is especially designed for wagon, carriage and agricultural implement work. It has capacity for hubs up to 12 inches in diameter and 16 inches long. The main feature of construction on the machine is that the column and the bearings for the crank-shaft are cast in one piece, thereby resisting the shock of the ram and insuring a clean mortise.

The table has angling, vertical, lateral and transverse adjustment. The lateral movement is made by rack and pinion.

The chisel mandrel has double automatic reverse. It is mounted on a solid ram, and moves in adjustable gibbed slides, is provided with variable stroke controlled by operator's foot, so arranged that jar is taken altogether by the table and column.



All the bearings are provided with quick take-up for wear. The new strap device on the upper end of the pitman permits of changing the bronze bushing without dismantling the upper part of the machine. The crank and crank-shaft are forged all in one piece, and have an outside bearing which prevents an uneven thrust on chisel spindle and pitman.

The boring spindle is in line with that of the chisel, and is counterbalanced by coil spring. It has stops to guage the depth of boring, is driven by pulley at the top of column, and has its own tight and loose pulleys.

The machine is furnished with or without the hub attachment, which consists of a tipping rig for staggered spokes, and is operated by lever shown, which is self-locking.

For further information regarding this tool, the readers are requested to write the manufacturers, who will be pleased to send full description.

Digitized by Google

CARRIAGE SALESMANSHIP

Essential Elements Necessary to Its Making

NATURE in her wise disposition of things seems to have ordained and moulded the intellect of man individually, to perform some special work with greater richness and harmony to the immediate surroundings, than if cast in more unattractive veins of expression. There are walks in life in which those who excel with the eccentricty of genius must have had their gift inbred, because it is impossible to make the poet, though education polishes and cultures his thoughts in expression, yet for his words to live the deathless life, he must be possessed of genius.

The inventor, orator, craftman and salesman must be born to their calling, otherwise they will never rise above the normal level of distinction.

It has often been remarked that it takes the highest ability to design, build and finish a high class piece of coach making from start to goal. Yet when this is accomplished it wants commercializing by the salesman; in short, it requires selling, and selling well.

In a firm of high reputation the work of a salesman is very much lessened; the standard and individual style of a builders' products, together with a defined figure at which the carriage must be sold, holds in check the talent of a salesman, or, rather, it does not require that rare quality of subtle persuasion in such a degree as if there was nothing but the carriage itself to be expatiated upon, but still with the ground work of a good reputation to travel upon, a salesman frequently finds all his work cut out to effectually commence with a customer in selling a carriage.

A salesman of the highest talent is a man who intuitively gauges the bent of a customer's thoughts, and with polite suavity trains his points of attack in line with those thrown open by the needs of the buyer.

That the salesman will succeed depends entirely upon the confidence he inspires those with whom he is dealing by grasping their wants to the smallest detail, and showing that appreciative interest in trying to serve them, whether in making a sale or in taking an order, for these are points that impress a customer with a deserving confidence.

The true salesman will be studiously courteous, and avoid giving the impression that he is conferring a favor in selling his wares. A salesman will create the feeling that the buyer is having a bargain, and that through the purchase a receptivity of obligation has been wormed into the contract.

The man who sets out with the idea that the world cannot do without him and his wares, too, is a specie of relation to the virgins who neglected to take oil in their lamps, and will assuredly be lost in the mist of his own short sighted folly.

The all-important and arrogant man who has been put into a misplaced position, will always be a failure, either as a salesman, organizer or as a leader of men, because his very nature, which is so hide-bound in its own self-importance, will act as a wet blanket in his endeavor to do business where the magnetic influence of sympathy is wanting, in that the one is desirous of purchasing and the other of selling, which finally become negatives in harmony, when satisfactory business is done.

A carriage in the hands of such a salesman must in a great measure sell itself; hence, where the talent of the salesman is at zero, the business of a house, no matter what its high reputation may be, suffers in turn, and eventually suffers seriously.

Practical and Commercial Salesmen Rare.

It is a rare combination to find the thoroughly practical and the commercial in the one person. An intellect that is endowed with a diverse richness, and that would shine in any walk of life, is not often met with, though they come strikingly to the front, if there is energy behind to force these qualities to make opportunities, instead of waiting for them to turn up. And it is thus that a salesman with the grit in him always seizes upon opportunities which offer themselves to do business, whether the compass is narrow or wide. The Napoleons of commerce have not been those who were skilled in the use of tools, but who could see and make the most favorable use of their chances, and who looked ahead to build up character, which is of more value than fine gold, and more precious than rubies.

Thus a salesman in his commercial contact with the carriage using world needs to be careful as well as energetic, for his word is that of the firm he represents in the capacity of their salesman, but with goods of the highest grade to handle, as a foundation for his expatiation upon the value he represents to be given, he need have no fear of his self-bestowed praises, which in the order of selling are allowable, so long as there is no misrepresentation wilfully made to induce the purchaser to buy.

It is indeed a grand compliment when a firm has built its reputation up through honest dealing to be told that those who purchase from them have faith in their word as in their bond, and where there are no intricate agreements drawn with elusive language, which has no other object than that of making all obligations that may arise a false claim, and their legal construction a void.

A salesman who is not hedged round with such methods of high procedure has a healthy freedom given to his energies, which returns a hundredfold to the firm by whom he is employed.

Salesmanship of quality is the result of individuals, in that it grasps with magnetic quickness the leanings of those with whom business is being discussed. It is smart without officiousness, and coy in moving on the main chance it gets in points of persuasiveness with subtle grace; it does not head a caller off, but leads with strategic agreeableness and advisory counsel to points of clear explanation, and this wins the buying confidence of those it is thrown in business contact with.

Practical Questions to be Answered.

A really accomplished salesman is one who possesses a first-class practical and theoretical knowledge of carriage building, and who is never caught at a disadvantage and possesses all the elements of a tactful courtesy.

Should a customer ask awkward questions, which they very often do, a salesman, to inspire confidence, should be able to reel off the information without hesitancy. The draught of a vehicle is a very common theme discussed by those purchasing a carriage. The height of wheels, and their distance apart from their centers, and also points in the hanging of a carriage, which in no small degree influences its sale, or are points which relegate it to the aggregate of stock found in the show rooms of every coach maker that can only be classed as of the white elephant class, and as assets of burden they must either be altered, or wait the arrival of the individual whose tastes are in the travel of the peculiarities which have been so unacceptable to the majority of buyers.

The span of wheels, whether they be short coupled or long coupled, are under certain conditions points of advantage and of disadvantage in the localities in which they may be used. A closely coupled carriage centers the weight with a narrow base upon the wheels, consequently in a hilly country they are dangerous in coming down hill; but in a level country they are better of draught, though on a level plain it has been proved that there is scarcely any difference in the pull of a long

Digitized by Google

coupled carriage and a close coupled one of equal weight, while a close coupled vehicle is the one more liable to be turned over in rounding a corner or in colliding with any object. Whereas a long coupled carriage of the tandem type is an advantage in a hilly country, for in descending a hill the base of the weight centered through the wheels is long, and therefore a horse or horses have a greater leverage in holding the weight back, because it is distributed over a wider span of column and can therefore with the help of an efficient brake be held in check with greater effect. But this is not by any means the generally accepted theory of the principles of draught, for they are almost the reverse of the pleadings already set forth.

The height of wheels is also a debatable section of the principles of draught. A wheel is a circular lever, on which gravity acts with a quickened multiplication, both for and against, in rising and descending an incline. A low wheel, that is a wheel consistent with the design of the carriage it is fitted to, is the best for a hilly country, while for a flat or level country a high wheel is the best for getting over the ground, but high wheels are bad hill climbers.

On four-wheeled carriages, such as broughams, the front wheels should not be higher than 36 inches, and the futchell jaw point not less than 36 inches from the ground, so that the trace may be at a sufficient angle to enable the horse to lever the wheel over obstacles, as well as draw the load forward.

In the matter of brakes, their first importance is effectiveness. The block should be placed above the center of the wheel to allow for the deflection of the springs, when the carriage is loaded, while the fulcrums of vantage should be worked out to the fullest as far as the construction of the carriage will admit in any design of four-wheeled carriage.

A carriage may be faultless in design and finish, yet the action of its springs be far from satisfactory in their working, which may arise from various causes. The plates may be too stiff, and in their width too narrow, or they may be too short to yield a free and easy motion when acted on by the weight.

They may be too quick in their compass, and thus offer a stiffened motion or the eyes may not be lined with india rubber bearings, which are necessary in all high class carriage springs, and thus in several ways, with which the practical coach maker is well versed, a spring may be defective in other ways, and all need to be clearly explained away.

Then there is the painting and the trimming as qualities of finish; these when beautifully blended and artistically finished are the crowning points to a high class piece of work, and help the salesman to a successful issue in handling his goods, but he should fully understand the practice and art of these branches.

The points enumerated as stock knowledge in parts are those that a salesman should seize upon with an agility of freedom in dealing with a customer, if he should be questioned, but whether or not, every telling characteristic in handling should be brought forward in the inducement to purchase.

The value of a salesman stands out far away and ahead of the other branches which aggregate in carriage manufacture, because hundreds of dollars hang upon his successful rendering of stock into money. And this is why a salesman should be so well versed in every detail of carriage construction and thus be able to give estimates off hand for work to be done, also to be able to undertake the alteration and general repairs to any vehicle that may be required to be estimated upon.

Another great advantage to a salesman, is to be able to sketch and draw, which will stand him in good stead in dealing with callers who can only give verbal expressions to their tastes. So many people require their ideas and taste to be conveyed to them in a tangible way, that the ability to show these people that their needs are clearly understood by a salesman, is a great and practical help to the completion of business.

A salesman needs to be quick in reading character. Some buyers require a lot of talking to, while others are better left to their own silent judgment, and some are hard bargainers and show a clever keenness in their business dealings. It is in an educated grasp of these traits, together with a cultured and affable address as the stock in trade of a carriage salesman, where true and lasting business is done.

CONGRATULATIONS FROM ABROAD.

Southampton, England, September, 17, 1908.

Editor The Hub:—

I am pleased to learn that you are going to commemorate the 50th anniversary of The Hub's publication in October next.

I have been a reader of The Hub for thirty years, and can therefore speak with some authority of its value as a trade journal—though this is far from necessary, because The Hub's high standing, and the support accorded it by the vehicular industry throughout the world during these fifty years, are credentials of proud impress.

In the picturesque language of Emerson, The Hub has "hitched its wagon to a star," and thus endeavored to strengthen the brain and train the hands of its readers, as to rise above the dead level of the trade's mass. The Hub has always been on the crest of the tidal wave of progress, and its aspirations in the van of carriage trade journalism. It has occupied no mean, but always stood aloft in conspicuous projection.

My connection with The Hub dates from the days of Mr. Houghton, Mr. Eggers, Mr. Templeton, Mr. Fitzgerald and up to the present management. My experience has been genial and pleasant, and I heartily congratulate The Hub upon its jubilee, and that its future career will still further illumine its past efforts in keeping a high standard of carriage design before the trade is my sincere wish.

The technical and practical guidance to be found in The Hub's columns, disseminates most valuable instruction, and of that high calibre that has characterized the journal as an authority to be followed. And with my best wishes, I am,

Yours faithfully,

THOS. MATTISON.

MAKE THIS A DAY.

Make this a day. There is no gain
  In brooding over days to come;
The message of to-day is plain,
  The future's lips are ever dumb.
The work of yesterday is gone—
  For good or ill, let come what may;
But now we face another dawn.
  Make this a day .

Though yesterday we failed to see
  The urging hand and earnest face
That men call Opportunity,
  We failed to know the time or place
For some great deed, what need to fret?
  The dawn comes up a silvery gray,
The golden moments must be met.
  Make this a day.

This day is yours; your work is yours;
  The odds are not what pays your hire.
The thing accomplished that endures,
  If it be what the days require.
He who takes up his daily round,
  As one new armored for the fray,
Tomorrow steps on solid ground.
  Make this a day.

—Exchange.

When a man is ignorant of old ways of doing things, he roars out for a new one because he does not understand it, but hopes it will help him on.

Digitized by Google

BILL TO PROTECT VEHICLE REPAIRERS.

The proposed law herewith submitted and about to be presented to the General Assembly of the State of Missouri should appeal to every shop in that state and other states where repair work is done, It will make it possible for carriage and wagon repairers to decrease losses and thereby increase profits.

Alfred Reynolds, president of the Reynolds Carriage and Manufacturing Company, Joplin, Mo., is also president of the local committee of Joplin and he desires the co-operation of all repairers by requesting them to write their representative and state senator and urge them to support the bill with an endeavor to push it through the next session of the Missouri Legislature.

The act giving to machinists, mechanics, artisans and other persons, a lien upon wagons, buggies, carriages, surries, phaetons, automobiles, trucks, drays, and other wheeled vehicles, for work, or labor performed, and for material furnished in the repair of same is as follows:

Section 1. Every mechanic, machinist, artisan or other person, who shall do or perform any work or labor for or furnish any material in the repair of any wagon, buggy, carriage, surrey, phaeton, automobile, truck, dray, or other wheeled vehicle, under or by virtue of any contract with the owner or proprietor thereof, or his agent, or trustee, upon complying with the provisions of this article shall have for his work or labor done, or material furnished, a lien upon such wagon, buggy, carriage, surrey, phaeton, automobile, truck, dray, or other wheeled vehicle to secure the payment for such work or labor done or material furnished as aforesaid.

Section 2. It shall be the duty of every person seeking to obtain the benefits of this article, to file within ninety days after the indebtedness shall have accrued with the clerk of the circuit court of proper county a just and true account of the demands due him after all just credits have been given which is to be a lien upon such wagon, buggy, carriage, surrey, phaeton, automobile, truck, dray, or other wheeled vehicle and a true description of the property or so near as to identify the same upon which the lien is intended to apply with the name of the owner of such vehicle which shall in all cases be verified by the oath of himself or some credible person for him.

Section 3. It shall be the duty of the clerk of the circuit court to indorse upon every account the date of its filing, and make an abstract thereof in a book by him to be kept for that purpose, and properly indorsed and indexed, containing the date of its filing, the name of the person seeking to enforce the lien, the amount claimed, the name of the person against whose property the lien is filed, and a description of the property charged with the same, for all which the clerk shall receive as full compensation the sum of one dollar from the person filing the account or seeking to enforce the lien, which shall be taxed and collected as other costs, in case there be an action thereon.

Section 4. The lien for work and materials as aforesaid shall be preferred to all other incumbrances upon such wagon, buggy, carriage, surrey, phaeton, automobile, truck, dray, or other wheeled vehicle subsequent to the commencement of the repair of the same.

Section 5. The pleadings, practice, process and other proceedings in cases arising under this article shall be the same as in ordinary civil actions and proceedings in circuit courts, except as herein otherwise provided. The petition, among other things, shall allege the facts necessary for securing a lien under this article, and shall contain a description of the property charged therewith.

Section 6. In all suits under this article the parties to the contract shall, and all other persons interested in the matter in controversy or in the property charged with the lien may be made parties, but such as are not made parties shall not be bound by any such proceedings.

Section 7. In case of the death of any of the parties specified in the next preceding section, whether before or after suit is brought, the executor or administrator of such deceased party shall be made plaintiff or defendant as the case may require, and it shall not be necessary to make the heirs or devisees of such deceased persons parties to said suit; but if there is no executor or administrator of such deceased person, then his heirs or devisees may be made parties, and if any of said heirs or devisees are minors, under age of twenty-one years, their guardians shall be made parties with them; but if such minors shall have no gaurdians, the court in which the suit is pending shall apoint guardians ad litem for them, in the same manner and under the same rules and regulations as guardians ad litem are appointed in proceedings for partition of real estate, and the judgment and proceedings of such court in any such suits shall be as binding on such minors as if they were over the age of twenty-one.

Section 8. The Court shall ascertain, by a fair trial in the usual way, the amount of indebtedness for which the lien is prosecuted, and may render judgment therefor in any sum not exceeding the amount claimed in the demand filed with the lien, together with interest and costs, although the creditor may have unintentionally failed to enter in his account filed the full amount of credits to which the debtor may be entitled.

Section 9. Judgment by default shall be rendered against any defendant who, after being summoned or notified according to law, shall not appear and plead within the time allowed in ordinary civil actions.

Section 10. When the debtor has not been served with summons according to law, and has not appeared, but has been lawfully notified by publication, the judgment, if for the plaintiff, shall be that he recover the amount of indebtedness found to be due, and costs of suit, to be levied on the property charged with the lien therefor, which said property shall be correctly described in said judgment.

Section 11. When the debtor has been served with summons according to law or appears to the action without service, the judgment, if for the plaintiff, shall be against such debtor as in ordinary cases, with the addition that if no sufficient property of the debtor can be found to satisfy judgment and costs of suit, then the residue thereof shall be levied as provided in the next preceding section.

Section 12. The execution to be issued shall be a special fieri facias and shall be in conformity with the judgment and shall be returned as ordinary executions and the advertisement, sale and conveyance of the property upon which the lien is sought to be inforced shall be made as now provided for the sale of personal property under execution.

Section 13. All actions under this article shall be commenced within ninety days after filing the lien, and prosecuted without unnecessary delay to final judgment; and no lien shall continue to exist, by virtue of the provisions of this article, for more than ninety days after the lien shall be filed, unless within that time an action shall be instituted thereon, as hereinbefore prescribed.

Section 14. Whenever any debt, which is a lien upon any wagon, buggy, carriage, surrey, phaeton, automobile, truck, dray, or other wheeled vehicle shall be paid or satisfied, the creditor, if required, shall acknowledge such satisfaction upon the record or margin thereof, in the office of the clerk of the circuit court, for which said clerk shall be allowed a fee of twenty-five cents.

Section 15. If any creditor refuse to enter satisfaction within ten days after payment and request, as aforesaid, he shall be liable to any person injured, to the amount of such injury and cost of suit.

WAGON COMPANY CLOSING OUT.

The Brockport Wagon Company, Brockport, N. Y., is closing out its affairs, and, after making up and disposing of the stock on hand, will cease to exist. A. L. Furney, organizer of the company, is now out of it entirely, and at a directors' meeting held recently Messrs. Minot, Coleman and M. A. Shafer were placed in charge of the affairs of the company.

Digitized by Google

PARRY BUGGIES.

Because a builder has an immense plant and produces goods at reasonable prices, it is not an indication that the work is necessarily cheap. The word cheap in connection with vehicles oftentimes carries with it a decidedly wrong impression. In Parry carriages there is a degree of excellence that is surprising when the price is considered. If it were not so would it have been possible for the business to have developed to its present proportions? The Parry plant and line is part of the Company's ad. on another page in this issue. The company is pleased with the line that it has planned for the season of 1909 and claim not only marked improvement in the work, but added features that will greatly increase wearing qualities. Parry buggies move and that is the game that pleases you, Mr. Dealer. Write the Parry Mfg. Co. of Indianapolis for full particulars regarding the 1909 line.

STEIN'S DOUBLE-CUSHION TIRE.

Rubber, especially if it is good rubber, furnishes the most natural cushion possible. Added to the rubber qualities of the Stein Double-Cushion tire is the gap at the bottom of tire which makes the tire doubly resilient, thus supplying all the comfort that can possibly be obtained from a rubber vehicle tire. The Stein Double-Cushion Tire Co., of Akron, O., wish that every builder who makes a specialty of applying tires would carefully inspect the rubber qualities of their tire. It's long on wear and they say once applied its use becomes a habit.

BODY AND SEAT WOODWORK.

The Highland Carriage Co., of Cincinnati, O., has long been recognized as a producer of exceptionally interesting and up-to-date line of vehicle bodies and seats. As work in the white is its specialty, with the advent of the automobile the company directed its attention to automobile seats. In this issue is shown an illustration of their No. 51 auto seat. If you are interested turn to the ad.

SPRINGS AND AXLES.

"If you know what you want, tell us; if you don't, we can tell you," is the way in which the Ansted Spring & Axle Co., of Connersville, Ind., appeal to the trade. With a plant equipped with every modern convenience for the manufacture of carriage and wagon axles and carriage and automobile springs, there is not much doubt regarding their ability to both supply and assist builders in filling their wants in this line. In automobile springs they are producing an oil tempered spring of high tensile strength.

HARLAND'S VARNISH.

Wm. Harland & Son, manuafcturers of Harland's world renowned English varnishes, have recently purchased extensive property in Buffalo, N. Y., on which they are erecting a thoroughly modern and well equipped plant for the purpose of manufacturing varnishes to meet the reqiurements of the consuming trade more fully than they have hitherto been able to do with solely imported goods.

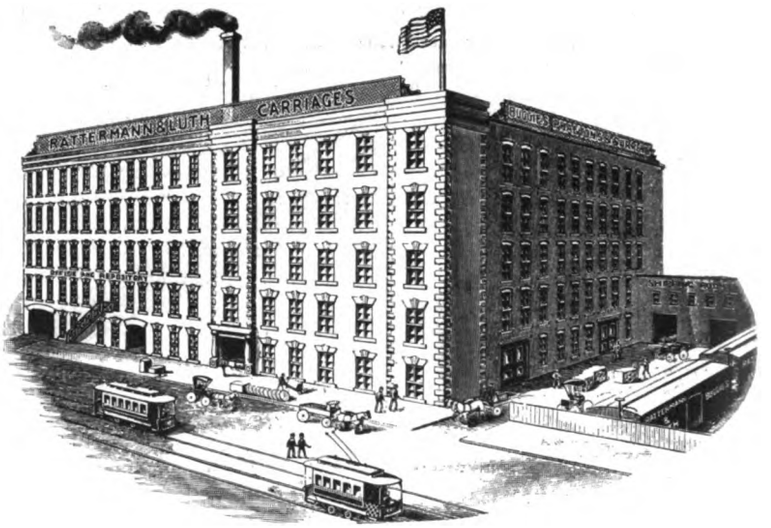
The policy of this firm, one of the oldest varnish houses in the world, has always been to give the finest quality possible, and that quality unchanged irrespective of the continually increasing cost of manufacture.

The Buffalo plant will in no way interfere with their importations of the celebrated Harland English varnish which has enjoyed the prestige of both the carriage and automobile dealer. The purpose of the Buffalo plant is to enable their American house to meet the demand for all grades of varnish, whether it be architectural, furniture, implement or marine. In carriage goods the builder may have a choice of either Harland's famous English or their new line of American varnishes.

Early this year this house also purchased a modern varnish factory in Toronto, which has now been in operation for some months. With experts at the kettles and an experience of nearly 120 years of varnish making to back up the goods, there is not the slightest doubt of their ability to fill the wants of the most critical wielder of the brush.

RATTERMANN & LUTH.

Pleasure vehicles in an endless variety make up the line of Ratterman & Luth, of Cincinnati, O., whose plant is illustrated herewith. Their specialty is medium priced work, although every job that is produced by this house has the style, finish



and general appearance of the highest grade of vehicle on the market. R. & L. carriages meet the popular demand and are the kind that please both dealer and patron. In their ad. they show two favorites. Look it up and write for catalog of full line.

"IT STANDS ALONE."

Among the colors that have found a place in the vehicle paint shop is Johnston's 226 Red. In speaking of this color the R. F. Johnston Paint Co., of Cincinnati, O., guarantee it to be permanent and of good body. 226 Red is ground in japan and is marketed at twenty cents a pound. The heads of paint shops that are interested in a good red can obtain a sample of Johnston's 226 Red by advising the house of their desire.

FRANTZ BODIES AND SEATS.

"Work in the white," that is carriage and automobile bodies and seats, represent the line of manufacture of the Frantz Body Co., of Akron, O. With an equipment that includes skill and capacity this company is prepared to listen to the overtures of builders, either carriage or automobile.

Their line of carriage seats is a particularly interesting one. Some of the popular numbers are illustrated in the company's ad. in this number.

JONES' WHEELS.

For more than half a century Jones' wheels have occupied a conspicuous position in the world of vehicles. Wheels of quality has always been the aim of Phineas Jones & Co., and the test of time has caused them to be known as "the best wheels on earth." This famous Newark, N. J., house, whose card is a very prominent one in this issue, is always to be found among the C. B. N. A. exhibitors.

Digitized by Google

AREAMETER.

On another page in this number the Tufting Machine Supply Co., of Chicago, Ill., illustrates its latest production, the Connolly Areameter, which is an instrument of immense value to the leather worker in the trim shops of both the carriage and automobile trade. It is without doubt the most accurate measuring machine for hides and patterns yet produced. The Areameter will be on exhibition at the C. B. N. A. show and every builder of carriages and automobiles should make it a point of seeing it fully demonstrated. Turn to ad. for illustration.

BUILDING NEW LINE OF BUSINESS WAGONS.

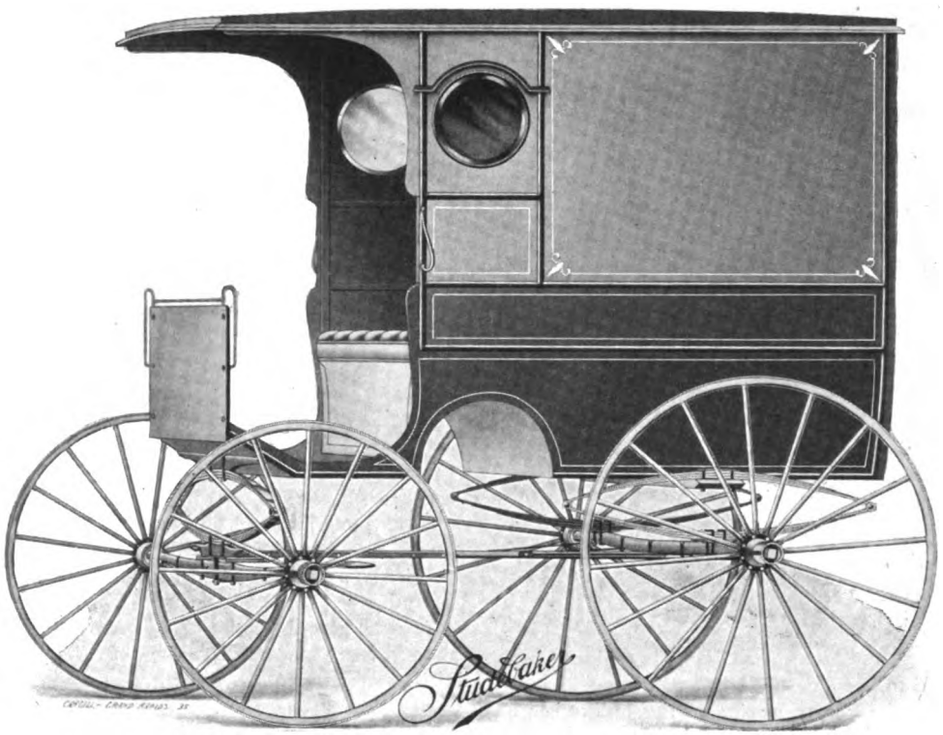
Within the last few weeks Studebaker Bros. Mfg. Co., South Bend, Ind., has completed an entirely new line of business wagons, embracing some sixty-five different styles.

For many years this company has been building delivery wagons of the very highest grade, but realizing that there is a growing demand for a medium grade of delivery wagons, selling at a popular price, they decided to put a line of this kind of vehicles on the market under the name of the "South Bend Line." The styles are all up-to-date and the wagons are substantial and most attractive in appearance. Many of the wagons are built with knock down tops so as to enable them to crate very close, thereby effecting a large saving in the freight charges; in fact, most of these jobs will crate under thirty inches. The styles are all new and original and very pleasing in their details, and the Studebaker company has already booked a great many orders for this line, which embodies wagons suitable to nearly every kind of business.

The gears range from 1 1-16 in. to 1 3-8 in. inclusive. All jobs are equipped with Concord axles and double stay braces, with either three or full platform springs, with low front wheels to turn under body or high wheels and short turn fifth wheel. Bodies are 42 in. and 45 in. wide, 7 ft. 3 in. and 7 ft. 6 in. long, thus making a very roomy body; with or without wings, and with duck or panel top. The wheel house wagons are among the most attractive styles in the line. Some very tatsty wheel house styles are shown, especially for the laundry and department store trade. The accompanying plate, from their catalog, is one of the lightest wood panel top wagons on the market, weighing only 450 lbs., and especially suitable for small horse or pony.

In designing this line, the needs of grocers, butchers, dairymen, bakers, furniture dealers, and all those who have use for a light top or open delivery wagon at a medium price, have been carefully studied, and the line will undoubtedly meet with the approval of those in need of delivery vehicles.

The new catalog for the "South Bend Line" will soon be ready for delivery and will be gladly mailed to any one interested.



"ELASTICGLOSS."

On another page in this issue the C. A. Willey Co., of Hunter's Point, New York City, illustrates in a modest manner its plant and some of the various departments where the celebrated "Elasticgloss" colors and other Willey specialties are manufactured for the carriage and automobile trade. Studying the wants of the industry and producing just what is necessary to fill that want has made this house one of the important factors in the finishing department of all types of vehicles.

The capacity of the C. A. Willey Company's plant for serving the trade promptly and satisfactorily is universally recognized. The varnish plant in connection with this buisness is one of the most up-to-date in existence, having an annual capacity of upwards of 100,000 gallons of varnishes and japans, all of which are consumed in the manufacture of this company's paint and color products.

PERFECTION SPRINGS.

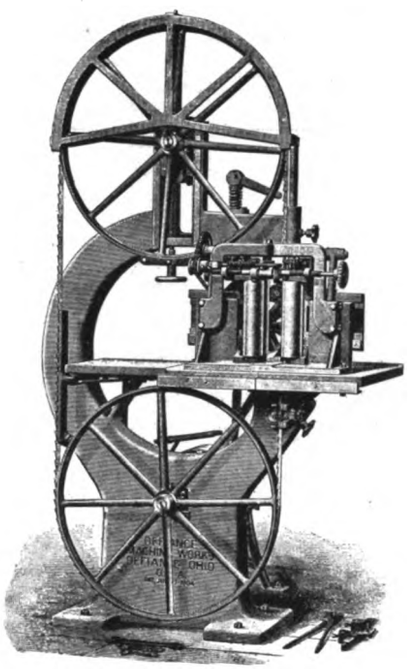
High grade springs for the best class of carriages and automobiles is the specialty of the Perfection Spring Co., of Cleveland, O. The easy riding qualities and durability of their product has brought them a recognition of which they are justly proud. It is their purpose to advise vehicle builders that if they seek spring perfection, to investigate the springs made by the Perfection Spring Co. process. A new automobile spring that was recently produced by this house is meeting with remarkable success. This line is worthy of closer investigation. E. F. Bunker, a familiar figure in the spring market, is now identified with the Perfection Spring Co. and will represent this house in the territory east of Buffalo, N. Y.

Digitized by Google

THREE MACHINES COMBINED IN ONE.

This engraving represents a new 36-inch band, scroll, rip and resawing machine, which is a most conveniently arranged tool for doing various kinds of band scroll sawing, ripping and resawing lumber. It is a combination of three machines in one, and it can be changed in a few moments time from one class of work to the other. It has proven to be a general favorite among wood workers. It is suited to the very finest scroll sawing required in piano and organ factories, pattern shops, fancy wood-workers, etc., as well as the heavier kinds of work such as sawing plow beams, wagon and carriage wood stock, agricultural implement parts, ship and car work, sawing hard wood with a saw blade as wide as 2 inches. All the adjustments on this machine, which is made by the Defiance Machine Works, Defiance, O., are so perfect that it can be run constantly without injury to the saw blade or the machine.

The patent tension device is provided with a compression spring in connection with the upper wheel, which provides the



exact amount of tension to the saw under all conditions, instantly accommodating itself to light or heavy sawing unlike the old style weight affair, which is cumbersome and slow to act. The saw will cut perfect work only when the tension is accurate. By a single hand screw, the upper saw wheel can be tilted while running to lead the saw to any path desired over the face of the wheels.

The table of iron is 30 inch x 34 inch, planed true and arranged to tilt to 45 degrees angle for bevel sawing. The top is laid off in inches and fractions and fitted with a patent rip saw guage, to be used for ripping lumber. This guage can be instantly placed on or removed from the machine. Patent nonfriction guides are used above and below the table, and they are warranted not to heat or injure the saw blade.

The re-sawing attachment consists of four vertical feed rolls, all powerfully driven, with three changes of feed to saw 20, 30 and 40 feet per minute, and it will accommodate material up to 12 inches wide x 4 inches thick or any sizes under, and it will saw the stock parallel or beveling and to any thickness required.

INFORMATION WANTED.

Any person knowing the address of the manufacturers or agents of the New Brodhage Spoke Tenoning Machine will confer a favor by informing the publishers of this journal.

OBITUARY

Joseph P. Wright.

Joseph P. Wright, president of the James A. Wright & Son Carriage Co., St. Louis, Mo., died September 12, aged 55 years. Mr. Wright was a brother of Frank Wright, who died June 30, 1904, while holding the office of president of the Carriage Builders' National Association.

Mr. Wright's death was due to Bright's disease. He never married and devoted his time to the building up of the carriage business, which his father left in the hands of himself and brother when they were very young men.

Mr. Wright was born on Octoboer 28, 1852. James A. Wright, his father, started the carriage business in St. Louis in 1847.

W. J. Breed.

W. J. Breed, president of the Crane & Breed Mfg. Co., coach and hearse builders of Cincinnati, Ohio, died on September 1, at Los Angeles, Cal., from an attack of pneumonia. He journeyed to California to join his wife and daughter.

Deceased was born at Fairham, Mass., in 1835 and upon the completion of his studies entered the business of his father, with whom he continued until the latter's death in 1899, when he assumed the management.

Mr. Breed was very much interested in philanthropic work in Cincinnati and prominent in business circles. He is survived by a widow and five children.

Andrew J. Haliday.

Andrew J. Haliday, 76 years old, one of the most prominent citizens of Rahway, N. J., died on September 27, at his home in that city. In 1858, with his brother, he started manufacturing carriages, under the firm name of S. & A. J. Haliday, which business was continued until about a year ago. Mr. Haliday was a public spirited citizen, having served three terms of three years each as a member of the Rahway Common Council during the critical period of the city's affairs. He also served three terms as member of the county board of Freeholders, during which time he took an active part in improving the county roads, good roads being a hobby of his.

Had Mr. Haliday lived until December 6 he would have been a Mason fifty-five years. He had been in poor health for the past seven years and confined to his bed for fourteen months. He leaves a wife, three daughters and two sons.

George Tiel.

George Tiel, head of the firm of George Tiel & Co., carriage supply house of Philadelphia, Pa., died August 30, at his home at Bethayres, Pa. Mr. Tiel was born in 1832. In 1862 he entered into partnership with J. G. Rouse in the carriage goods business, under the firm name of J. G. Rouse & Co. Mr. Rouse retired in 1905 and the firm became known as George Tiel & Co.

Deceased was well-known throughout the carriage trades, having spent forty-six years in selling supplies to the trade. He is survived by one daughter and a son, Howard Tiel, who, with S. E. Wright, are the two remaining partners. Business will be continued as heretofore.

Christian A. Boehm.

Christian A. Boehm, the oldest active business man in Camden, N. Y., died at his home on September 23.

He was born at Wittenburg, Germany, 1831, and when a boy began at the trade of carriage making. In 1852 he arrived in this country, where he followed his trade at Oswego. After the big fire in that city in 1854 he went to Utica, where he resided seven or eight years. In 1864 he came to Camden, where

Digitized by Google

he and the late James Stark associated in business. They purchased a wagon shop and continued in business together for seven years. Upon the dissolution of the partnership, Paul E. Boehm, his brother, became a partner. They manufactured all kinds of vehicles as well as making a special cutter which has been on the market for over thirty years. About two years ago the firm dissolved partnership, and his son Andrew was admitted to the present firm of C. A. Boehm & Son. Besides his wife, Mr. Boehm leaves four daughters and one son.

James Duncan.

We have been informed of the death of James Duncan of Adelaide, South Australia, head of the house of Duncan & Fraser, coach builders in that city. Many carriage makers will recall his visit to this country six years ago. Mr. Duncan was a representative of the progressive Australian manufacturer. He was born in Rothsay, Scotland, in 1840, and after learning the trade of coach body-making in his uncle's shop in Glascow, he, at the age of nineteen years, went to Australia and shortly



James Duncan.

thereafter formed the co-partnerschip with Mr. Fraser. Being a skilled mechanic and possessed of advanced ideas, he advocated new methods and adopted American methods of manufacture as his models, and the company's shop soon became recognized as among the first in Australia, and his work found markets throughout the colonies, wherever good work was in demand.

Besides manufacturing all kinds of light and heavy vehicles, the company built heavy trucks as well as street cars.

Mr. Duncan's four sons, who were associated with him in the business will probably continue along the lines laid by their father.

Thomas J. McMurray.

Thomas J. McMurray, sulky builder of Marion, Ohio, died on September 4, of paralysis.

Mr. McMurray established a carriage factory at Marion in 1866 under the name of McMurray & Fisher. Later the building of sulkies became a specialty with the firm, which was subsequently incorporated under uder the name of McMurray Sulky Co. Deceased controlled the stock of the company but was not actively engaged in the management of the business, spending most of his time in Florida at his winter home. A widow and a son survive.

R. A. Robinson.

R. A. Robinson, aged 60 years, died in Spartenburg, N. C., at his home after a few days' illness.

Deceased, until a few years ago, was a member of the firm of Fowler & Robinson, dealers in and manufacturers of buggies and wagons. He was a Confederate veteran and served with bravery throughout the entire civil war. He is survived by a wife, two sons and one daughter.

George Elliot.

George Elliott, a resident of Dorchester, Mass., died suddenly at his summer home in Norton, last month, aged 67.

Mr. Elliot was for years in the carriage business in Providence, R. I., in company with his father, George C. Elliot. He leaves a wife, four daughters and a son.

Cyrus A. Jordon.

Cyrus A. Jordon, a retired carriage and wagon builder and a resident of the village of Jamaica, L. I., for the past fifty years, died at his home there, after a short illness from paralysis of the brain. He was born in Peekskill, N. Y. He sold his factory and business several years ago and retired with a competency. He leaves three sons and three daughters.

L. S. Lindesmith.

L. S. Lindesmith, a prominent business man of Lima, O., died August 31. He was 55 years old and a carriage manufacturer.

William S. Cramer.

William S. Cramer, president of the Buckeye Wagon Works, Dayton, Ohio, died recently at his home in that city of a complication of diseases. He was fifty-five years of age and one of the city's most prominent citizens. A wife and two daughters survive.

Humphrey Ayres.

Humphrey Ayres, carriage builder of San Francisco and Oakland, Cal., died on August 24. He was well known, having lived in California fifty-six years.

Henry Mueller.

Henry Mueller, carriage manufacturer of Newark, N. J., died on September 13. Deceased was wealthy and prominent in Newark. He leaves a widow and four children.

News of the Trade

NEW FIRMS AND INCORPORATIONS.

The Atlanta Motor Co., of Atlanta, Ga., has been incorporated with a capital stock of $100,000, to manufacture a device for applying full power of automobile to all four wheels.

R. W. Rocheford has put in a stock of vehicles and implements in Kansas City, Kan.

The Miles Auto Co. has been incorporated in Louisville, Ky., with a capital stock of $10,000, by Wm. H. Curtis, Sr., and others.

The Burke Automobile Co. has been incorporated in Chattanooga, Tenn., with a capital stock of $10,000.

The Alamo Mfg. Co. has been incorporated in Alamogordo, N. M., with a capital stock of $20,000, to manufacture adjustable buggy spindles.

C. E. Olmstead, of Lake Charles, La., is figuring on the establishment of a wagon factory in Temple, Tex.

G. A. Shatstrom is preparing to engage in the vehicle business in Callaway, Neb.

Digitized by Google

Lee Converse has engaged in the vehicle and implement business in Heartwell, Neb.

L. A. Rose is about to engage in the vehicle business in Rutledge, Mo.

Hydorn & Bentson have engaged in the vehicle and hardware business in Pemberton, Minn.

G. W. Pennington has just engaged in the carriage business in Colorado Springs, Colo.

The Middletown Buggy Company, of Middletown, Ohio, has been incorporated with a capital stock of $10,000. The incorporators are Morris W. Rennick, C. B. Johnson, W. H. Johnson, Dr. W. A. Lucas and W. M. Sullivan.

The Watson Wagon Company of Canastota, N. Y., has increased its capital stock from $200,000 to $400,000. It was also voted to retire $25,000 of preferred stock at once.

BUSINESS CHANGES.

C. A. Lewis has purchased the implement business of Theo. Keurlin, in Wahoo, Neb.

Bostrum Bros. have purchased the buggy business of Dan Bryan, in Garrison, Ia.

H. Dirks has succeeded to the vehicle business of Dirks Bros. in Holland, Ia.

The Warren & Smith Hardware Co. and the Harry Mead Co., of Shawnee, Okla., have consolidated their hardware, vehicle and implement stores.

J. H. Kissinger has sold his hardware business in Clarksville, Mo., but continues in the implement and vehicle business.

Hahan Bros. & Co. have sold their vehicle business in Callaway, Neb., to L. Anderson.

Conrad & McLean have purchased the vehicle business of Van Nortwick & Chadd, in Broken Bow, Neb.

A. M. Day, of Downs, Kan., has purchased the buggy and hardware business of Ed. Moberg, in White City, Kan.

S. A. Feay, of Rock Rapids, Ia., has sold his vehicle business to Clark & Muhleberg, of Webster, S. D.

G. E. Smith has disposed of his stock of vehicles, etc., in Johnson, Neb., to Wadley & Mendhall.

Suhr & Rasmussen have purchased the vehicle business of Meyer & Jorgenson, in Uehling, Neb.

Warner & Solseth have succeeded to the vehicle and hardware business of the Beatty-Warner Trading Co., in Fowler, Colo.

G. H. Luehr has sold his stock of buggies and implements in Worthington, Minn., to Gumiston & Wolven.

Adam Lockner has sold his buggy and implement business in Cedar Bluffs, Neb., to D. R. Cash.

E. A. Dale has succeeded to the implement and vehicle business of Hyde & Dale, in Electra, Texas.

Wood Bros. have sold their stock of buggies, implements, etc., in Corona, S. D., to Farley Bros.

Frank Kilpatrick has sold his implement and vehicle business to the Island City Milling & Merc. Co., in Pendleton, Ore.

The Pullman Implement Co. has succeeded to the vehicle business of B. F. Campbell, in Pullman, Wash.

Schmid & Frohm have purchased the buggy and implement business of W. E. Kinney, in Shelby, Neb.

James Peterson has sold his vehicle and implement business in Marquette, Neb., to Olson Bros.

J. C. Williams has purchased the retail business of David Williams, in Artesian, S. D.

Shreve & Moe have purchased the vehicle and implement business of C. H. Wilkinson, in Kendall, Wis.

Nat Fitzgerald has sold his entire stock of implements in Victoria, Tex., to W. H. Smith and others, but will continue in the buggy and harness business.

The first part of the wordly wisdom is to give good advice; the second is to take it, and the third to follow it.

FIRES.

The Johnston Vehicle Works, at Holsopple, Pa., has been totally destroyed by fire. Loss, 15,000.

Fire destroyed the carriage factory of Alanson E. Hallock, Smithtown Branch, N. Y., causing a loss of about $25,000.

A. L. Ashcroft's wagon factory at San Francisco, Cal., has suffered a loss of $3,500 by fire.

George W. Garrett & Son, Philadelphia, Pa., sustained a $10,000 loss by a recent fire in their carriage and wagon factory.

The Walker carriage factory, in Ann Arbor, Mich., has been damaged by fire to the extent of $4,000.

The large carriage factory of Jorge Warden, at Monterey, Mexico, has been destroyed by fire, causing a loss of about $300,000. It was insured for $160,000.

The vehicle and implement establishment of Paulson & Son, in Wells, Minn., has been damaged by fire to the extent of $10,000.

The plant of the Browman Carriage Co., of Sacramento, Cal., has been damaged by fire to the extent of $20,000.

MISCELLANEOUS.

York & Vick have erected a warehouse in Lexington, Tex., and stocked it with vehicles and implements.

Ogden & Wilcox have erected a hardware, vehicle and implement store in Houston, Tex.

The York Automobile Co. will fit up a big building by spring, in York, Neb., and will put in a line of buggies and carriages.

Mr. Trawyer has retired from the vehicle and implement firm of Smith & Trawyer, in Winterset, Ia.

Wants

HELP WANTED.

Wanted—Foreman painter in plant making heavy carriages. Must know how to handle men, and do best work. Reference. Address "T. C.," 4585 Okemwald Ave., Chicago, Ill.

Wanted—Experienced salesman to handle a speciality vehicle side line. We have some good unallotted territory. An attractive proposition to the right man. Reference wanted. State territory you are now covering. Address "H," care The Hub, 24 Murray St., New York City.

Wanted—Vehicle salesman to sell buggy and automobile tops as a side line on a good commission. C. G. Meyer & Son, Tiffin, Ohio.

Wanted—A man thoroughly conversant and acquainted with the carriage and wagon trade in and around Greater New York. Must be capable and experienced. None others will be considered. Give reference and state salary expected. Address Timken Roller Bearing Axle Co., Canton, Ohio.

Wanted—Salesman in vehicle and implement trade to handle side line of buggy tops, etc. Liberal commission paid. Write at once to Bauer Bros. Mfg. Co., Cincinnati, O.

SITUATIONS WANTED.

Wanted—Position as foreman trimmer or steady position on high grade carriage and automobile work. Can furnish good reference. Address "C. L. S.," care The Hub, 24 Murray St., New York City.

Wanted—Situation as all around trimmer. Thirty years experience on all styles of coach, automobile and light trimming. Object of leaving is dissatisfaction. Location is no object. Address Robert Joers, 1220 Clinton St., St. Louis, Mo.

Wanted—Situation by foreman trimmer with plenty of experience and best references. Address "Y. K.," care The Hub, 24 Murray St., New York City.

PATENTS.

Patents—H. W. T. Jenner, patent attorney and mechanical expert, 607 F. Street, Washington, D. C. Established 1883. I make an examination free of charge and report if a patent can be had, and exactly how much it will cost. Send for circular.

Digitized by Google

MOTOR BUGGY AXLES



Front Axle, Rear View



Square Dead Rear Axle

———WITH———

TIMKEN ROLLER BEARINGS

Such as are being used by most of the successful builders of the high wheel type of cars. Note the names of a few of the manufacturers who are using them

HOLSMAN AUTOMOBILE CO.
SCHACHT MANUFACTURING CO.
COLUMBUS BUGGY CO.
INTERNATIONAL HARVESTER CO.
RELIABLE DAYTON MOTOR CAR CO.
THE BENDIX CO.
CHICAGO COACH & CARRIAGE CO.
W. H. KIBLINGER CO.

If you are considering entering this field, be guided by the experience of older manufacturers. **Timken Axles and Bearings** are no experiment, but have been proven a success by years of satisfactory service. No better can be procured, regardless of price. Knuckles are **drop forgings,** and hardened bolts are used. Boxes are **of pressed steel,** with hardened and ground cups inserted. All bearings hardened and ground, thus insuring perfect bearing surface and durability.

Bearings guaranteed for two years.

If interested, write for catalog and prices.

The Timken Roller Bearing Axle Co.

Factory and Main Office: **CANTON, OHIO**

New York Office: **10 E. 31st STREET** Chicago Office: **429 WABASH AVENUE**

Digitized by Google

Index to Advertisers

Akron-Selle Gear Co. ... 59
American Pole & Shaft Co. ... 36
American Roller Bearing Fifth Wheel Co. ... 47
American Wood Block Co. ... 40
American Tube & Stamping Co. ... 68
Ansted Spring & Axle Co. ... 60
Atlas Bolt and Screw Co. ... 32
Auxiliary Spring and Ventilating Button Co. ... 2nd cover

Barnes & Co., W. F. & John ... 47
Beaudett Co., O. J. ... 56
Beckwith & Chandler Co. ... 12
Bentel & Margedant Co. ... 24
Berry Bros. Ltd. ... 11
Bertram & Lamoreaux ... 44
Bradley & Son, C. C. ... 47-57

Cleveland Bolt & Mfg. Co. ... 55
Crandall, Stone & Co. ... 41
Cincinnati & Hammond Spring Co. ... 30
Cortland Forging Co. ... 60
Cunningham, Son & Co., James ... 33
Carter Co., George R. ... 36
Cowles & Co., C. ... 22
Chase & Co., L. C. ... 63
Central Bureau of Engraving ... 56
Columbus Bolt Works ... 4th cover
Consolidated Rubber Tire Co. ... 17
Cooper Co., J. A. & D. P. ... 36
Cortland Carriage Goods Co. ... 14
Crane & MacMahon ... 37

Dalzell Axle Co. ... 59
Defiance Machine Works ... 27
Devoe, F. W., & Raynolds Co., C. T. ... 11
Ditzler Color Co. ... 8
Durant-Dort Carriage Co. ... 3d cover

Eberhard Mfg. Co. ... 43
Eagle White Lead Co. ... 24
Eccles Co., Richard ... 58
English & Mersick Co., The ... 65

Fay & Egan Co., J. A. ... 29
Flandrau & Company ... 33
Fitch Gear Co. ... 58
Flexible Shaft and Tool Co. ... 24
Frantz Body Mfg. Co. ... 63
Fairfield Rubber Co. ... 59
Flint Varnish Works ... 3
Fernald Mfg. Co., Inc. ... 16

Gerhab, Jacob ... 59
Gifford & Son, John A. ... 54
Goodrich Co., B. F., The ... 23
Goodyear Tire and Rubber Co. ... 11

Hankinson, J. V. ... 47
Harland & Son, Wm. ... 1
Hoopes Bro. & Darlington, Inc. ... 2d cover
Hess Spring & Axle Co. ... 31
Haydock Carriage Co., T. T. ... 34
Highland Carriage Co., The ... 19
Higgin Mfg. Co. ... 62
Herbrand Co., The ... 19

Indianapolis Bolster Spring Co. ... 44
Indianapolis Dash Co. ... 38
Indiana Rubber & Insulated Wire Co. ... 18

Jewel Mfg. Co. ... 57
Johnston Paint Co., R. F. ... 35
Jones & Co., Phineas ... 39

Keystone Forging Co. ... 30
Kokomo Rubber Co. ... 4th cover
Koller & Co., J. B. ... 58

Landsman Motor Co. ... 56
Landers Bros. Co. ... 44
Lewis Spring & Axle Co. ... 60

Metal Stamping Co. ... 51
Murphy Varnish Co., The ... 6-7
Mander Bros. ... 12
McFarlan Carriage Co. ... 61
Monroe Body Co. ... 63
Millcreek Wagon Co. ... 34
Monarch Carriage Goods Co. ... 27
Masury & Son, John W. ... 2
McKinnon Dash Co. ... 4th cover
Miller Bros. ... 44
Mills-Ellsworth Co. ... 40

National Screw & Tack Co. ... 55
National Safety Fifth Wheel Co. ... 44
National Spring and Wire Co. ... 44
Nobles & Hoare ... 5

Parry Mfg. Co. ... 48-49
Perfection Spring Co. ... 30
Pomeroy & Fischer ... 5
Porter, H. K. ... 57-67
Pioneer Pole & Shaft Co. ... 38
Pontiac Buggy Co. ... 41
Pierce Co., F. O. ... 4

Rattermann & Luth ... 15
Russell, Burdsall & Ward Bolt and Nut Co. ... 36

Staver Carriage Co. ... 35
Schacht Mfg. Co., The ... 46
Standard Varnish Works ... 9
Studebaker Bros. Mfg. Co. ... 20-21
Sheldon Axle Co. ... 50
Smith & Co., Edw. ... 11
Spring Perch Co. ... 30
Standard Ball Axle Co. ... 44
Standard Oil Cloth Co. ... 42
Stratton Carriage Co., C. H. ... 66
Shortsville Wheel Co. ... 66
Schubert Bros. Gear Co. ... 22
Swinehart Clincher Tire & Rubber Co. ... 22
Stein Double Cushion Tire Co. ... 19

Timken Roller Bearing Axle Co. ... 25
Tucker Wood Work Co. ... —
Tufting Machine Supply Co. ... 19

Union City Wheel Co. ... 35

Valentine & Company ... 13

West Tire Setter Co. ... 2d cover
White, H. F. ... 57
Wilcox Mfg. Co., D. ... 52-53
Willey Co., C. A. ... 10
Woodman, Joel H. ... 57
Wilson Body Co., C. R. ... 59

Zwick & Greenwald Wheel Co. ... 45

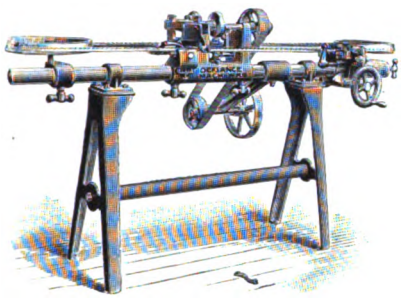
Digitized by Google

"DEFIANCE" WOOD-WORKING MACHINERY

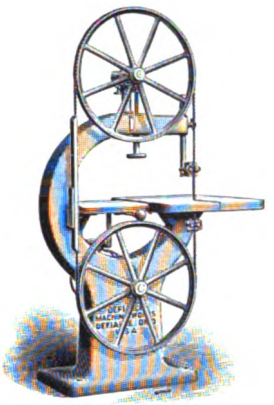
Invented and Built by

The Defiance Machine Works

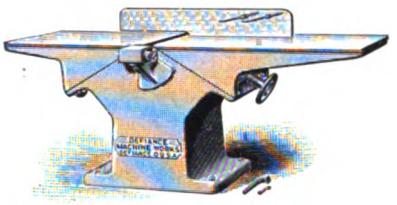
Defiance, Ohio



BAND SAW SETTER AND FILER.



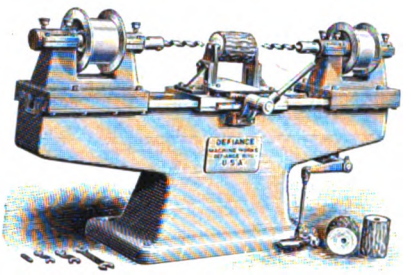
28-INCH BAND SAW.



24-INCH HAND PLANER.

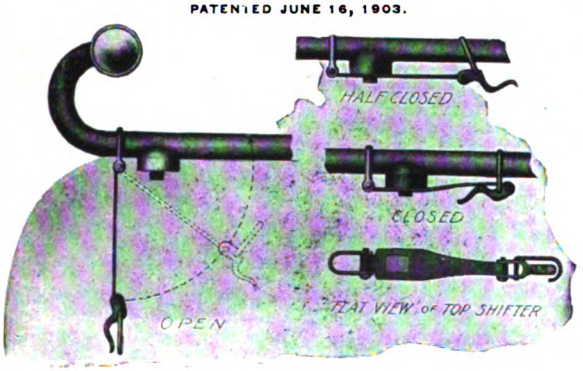
For Making

Hubs, Spokes, Wheels, Wagons, Carriages, Rims, Shafts, Poles, Neckyokes, Singletrees, Hoops, Handles of all Kinds, Insulator Pins, Bobbins, Spools, Table Legs, Oval Wood Dishes and for General Wood Work.



AUTOMATIC HUB BLOCK BORER.

PATENTED JUNE 16, 1903.

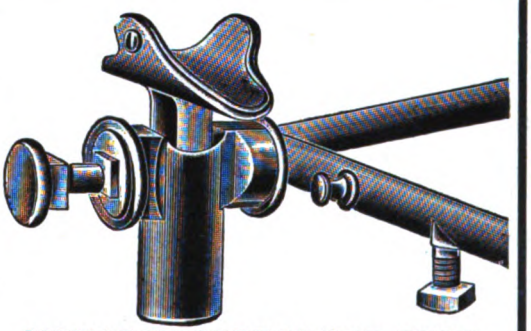


LITTLE GIANT TOP SHIFTER

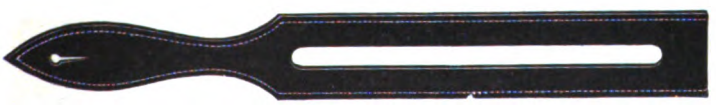
For converting an open into a closed job at a moment's notice.

WE MANUFACTURE

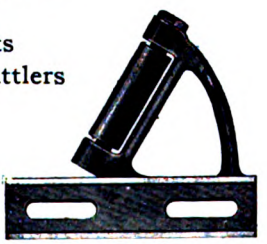
Buggy Boots
Storm Aprons
Toe Pads
Roll-Up Straps
Storm Fronts
Thomas Props
Prop Nuts
Prop Washers
Curtain Fasteners
Carriage Knobs
Knob Eyelets
Buckle Loops
Curtain Lights
Anti-Rattlers



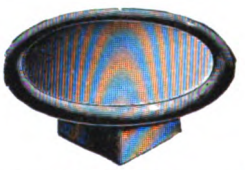
MONARCH SPRING TOP REST.



No. 4 ROLL-UP STRAP.



Ball Bearing Roller Rub Irons.



Full Line of Prop Nuts Japanned, Nickel, Oxidized, Copper and Brass.

THE MONARCH CARRIAGE GOODS CO.

CINCINNATI, OHIO.

See our Exhibit at C. B. N. A. Convention, at Chicago, Ill.

Digitized by Google

ADVERTISEMENTS CLASSIFIED

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one head.

Axles, Etc.

Ansted Spring & Axle Co., Connersville, Ind.
Dalzell Axle Co., South Egremont, Mass.
Hess Spring & Axle Co., Carthage, Ohio.
Lewis Spring & Axle Co., Jackson, Mich.
Sheldon Axle Co., Wilkes-Barre, Pa.
Standard Ball Bearing Axle Co., Lancaster, Pa.
Timken Roller Bearing Axle Co., Canton, Ohio.

Bodies, Seats, Etc.

Beaudett Co., O. J., Pontiac, Mich.
Flandrau & Co., New York.
Franz Body Mfg. Co., Akron, O.
Highland Carriage Co., Cincinnati, Ohio.
Millcreek Wagon Co., The, Cincinnati, Ohio.
Monroe Body Co., Pontiac, Mich.
Wilson Body Co., C. R., Detroit, Mich.
Woodman, Joel H., Hoboken, New Jersy.

Bodies in the White.

Miller Bros., Amesbury, Mass.
Schubert Bros. Gear Co., Oneida, N. Y.

Body Loops.

Herbrand Co., The, Fremont, O.

Bolts and Nuts.

Atlas Bolt & Screw Co., The, Cleveland, Ohio.
Cleveland Bolt & Mfg. Co., The, Cleveland, Ohio.
Columbus Bolt Works, Columbus, Ohio.
National Screw & Tack Co., The, Cleveland, Ohio.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

Carriage Cloths.

Wiese & Co., Wm., New York City.

Carriage Forgings.

Cortland Forging Co., Cortland, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

Carriage Hardware.

Eberhard Mfg. Co., Cleveland, Ohio.
Gifford & Son, John A., New York.
Higgin Mfg. Co., Newport, Ky.

Carriage Goods.

Cortland Carriage Goods Co., Cortland, N. Y.
Cowles & Co., New Haven, Conn.
English & Mersick Co., New Haver Conn.
Fairfield Rubber Co., Fairfield, Conn.
Gifford & Son, John A., New York.
Monarch Carriage Goods Co., Cincinnati, Ohio.

Dashes, Fenders, Rails, Etc.

Cortland Forging Co., Cortland, New York.
Indianapolis Dash Co., The, Indianapolis, Ind.
McKinnon Dash Co., Buffalo, N. Y.

Engraving.

Central Bureau of Engraving, New York City.

Fifth Wheels.

American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
National Safety Fifth Wheel Co., Lancaster, Pa.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

Finished Vehicles.

Cunningham, Son & Co., James, Rochester, N. Y.
Haydock Carriage Co., T. T., Cincinnati, O.
Pontiac Buggy Co., Pontiac, Mich.
McFarlan Carriage Co., Connersville, Ind.
Parry Mfg. Co., Indianapolis, Ind.
Ratterman & Luth, Cincinnati, Ohio.
Studebaker Bros. Mfg. Co., South Bend, Ind.
Staver Carriage Co., Chicago, Ill.
Schacht Mfg. Co., Cincinnati, O.

Hubs.

American Wood Block Co., The, Delphos, Ohio.
Koller & Co., J. B., Mechanicsburg, Pa.

Jacks.

Hankinson, J. V., Franklin, O.

Lamps.

Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

Machinery and Tools.

Barnes Co., W. F. & John, Rockford, Ill.
Bentel & Margedant Co., Hamilton, Ohio.
Defiance Machine Works, Defiance, Ohio.
Fay & Egan Co., J. A., Cincinnati, Ohio.
Maxwell & Fitch Co., The, Rome, N. Y.
Porter, H. K., Everett, Mass.
Strelinger Marine Engine Co., Detroit, Mich.
West Tire Setter Co., Rochester, N. Y.

Miscellaneous.

Bertram & Lamoreoux, Detroit, Mich.
Jewel Mfg. Co., Chicago, Ill.
Landers Bros. Co., Toledo, O., and Boston, Mass.
Standard Oil Cloth Co., New York.
Tufting Machine Supply Co., Chicago, Ill.

Poles and Shafts.

American Pole and Shaft Co., The, Cincinnati O.
Pioneer Pole & Shaft Co., The, Piqua, Ohio.
Mills-Ellsworth Co., The, Keokuk, Ia.

Rubber Tires.

Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, O.
Goodyear Tire and Rubber Co., Akron, O.
Indiana Rubber & Insulated Wire Co., Jonesboro, Ind.
Kokomo Rubber Co., Kokomo, Ind.
Stein Double Cushion Tire Co., Akron, O.
Swinehart Clincher Tire & Rubber Co., Akron, O.

Shaft Couplings and Anti-Rattlers.

Bradley & Son, C. C., Syracuse, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Fernald Mfg. Co., Inc., North East, Pa.
Metal Stamping Co., New York City.

Springs and Gears.

Akron-Selle Gear Co., Akron, Ohio.
Ansted Spring & Axle Co., Connersville, Ind.
Auxiliary Spring and Ventilating Button Co., Detroit, Mich.
Cincinnati & Hammond Spring Co., Cincinnati, Ohio.
Cooper, J. A. & D. P., Struthers, O.
Fitch Gear Co., Rome, N. Y.
Hess Spring & Axle Co., Carthage, Ohio.
Indianapolis Bolster Spring Co., Indianapolis, Ind.
Lewis Spring & Axle Co., Jackson, Mich.
National Spring and Wire Co., Albion, Mich.
Perfection Spring Co., The, Cleveland, Ohio.
Schubert Bros. Gear Co., Oneida, N. Y.
Spring Perch Co., Bridgeport, Conn.

Spokes.

Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.
Koller & Co., J. B., Mechanicsburg, Pa.

Steps.

Eberhard Mfg. Co., Cleveland, Ohio.

Steel Rims.

American Tube and Stamping Co., Bridgeport, Conn.

Strap Work.

Carter Co., Geo. R., The, Connersville, Ind.

Trimming Materials.

Stevens & Sackett Co., New Haven, Conn.

Top Prop Nuts.

Crandall, Stone & Co., Binghamton, N. Y.
Higgin Mfg. Co., Newport, Ky.

Varnishes, Paints and Japans.

Beckwith-Chandler Co., Newark, N. J.
Berry Bros., Limited, Detroit, Mich.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Ditzler Color Co., Detroit, Mich.
Flint Varnish Works, Flint, Mich.
Harland & Son, Wm., London and New York.
Johnston Paint Co., R. F., Cincinnati, O.
Mander Bros., Wolverhampton, England.
Masury & Son, John W., New York and Chicago.
Murphy Varnish Co., The, Newark, N. J.
Nobles & Hoare, London, Eng.
Pierce Co., F. O., N. Y. City.
Pomeroy & Fischer, N. Y. City.
Smith & Co., Edw., N. Y. City.
Standard Varnish Works, New York City.
Valentine & Co., New York, Chicago, Boston, Paris.
Willey Co., C. A., Hunter's Point, New York City.

White Lead.

Eagle White Lead Co., Cincinnati, Ohio.

Wheels.

Crane & MacMahon, New York.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.
Shortsville Wheel Co., Shortsville, N. Y.
Union City Wheel Co., Union City, Ind.
Zwick & Greenwald Wheel Co., Dayton, Ohio.

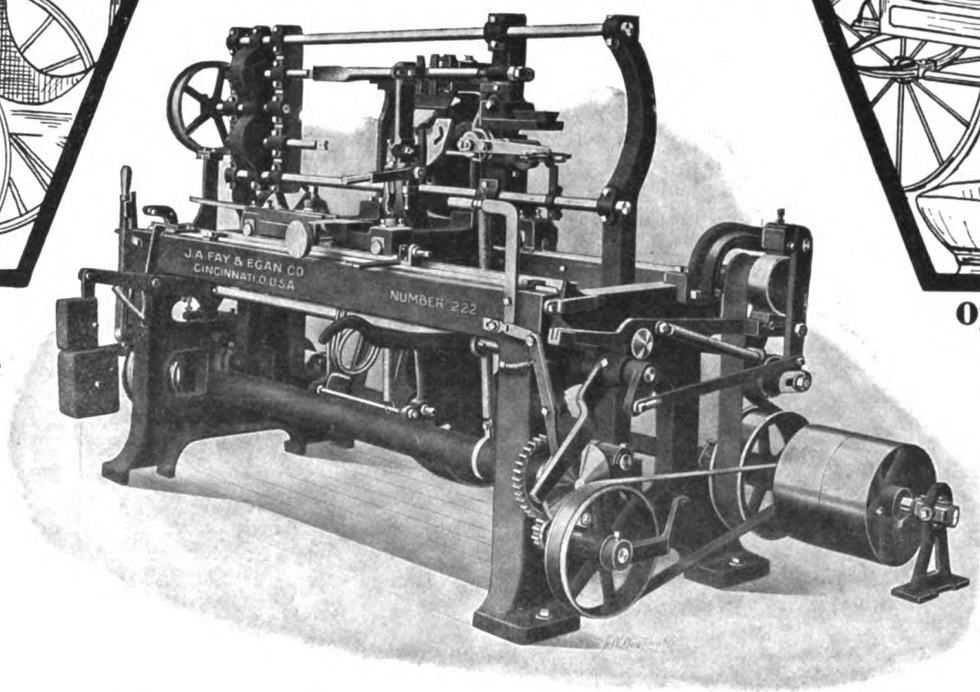
Wheel Stock, Bent Wood, Etc.

Crane & MacMahon, New York.
Koller & Co., J. B., Mechanicsburg, Pa.
Tucker Wood Work Co., Sidney, Ohio.

Digitized by Google



Our New No. 222 Automatic Spoke Lathe



Feed is Automatic

Operation is Simple

CAPACITY: 3,000 Spokes per Day. Write for Circular. Sheet No. 24-W

502-522 W. FRONT STREET

J. A. FAY & EGAN CO., Cincinnati, Ohio

Please mention "The Hub" when you write.

Digitized by Google

CINCINNATI & HAMMOND SPRING CO.

MANUFACTURERS OF

VEHICLE SPRINGS

Automobile Springs a Leading Specialty

GENERAL AND SALES OFFICE:

Nos. 909-923 Summer St. - - - CINCINNATI, OHIO

High Grade Vehicle Springs

of Every Description

Our Name is a Synonym for Quality in Springs. Material and Workmanship Guaranteed



PERFECTION TYPE





Perfection Types are Wonderful for Ease of Riding

THE PERFECTION SPRING COMPANY

Cleveland, Ohio



PATENTED DEC. 3, 1901

THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland Pa.

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

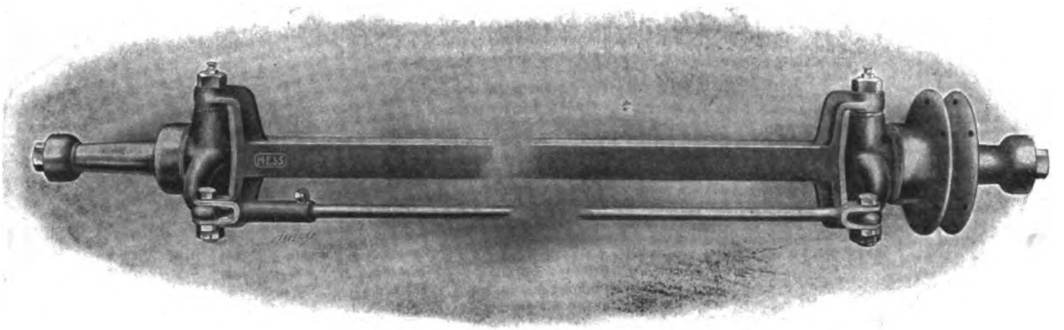
THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

Digitized by Google

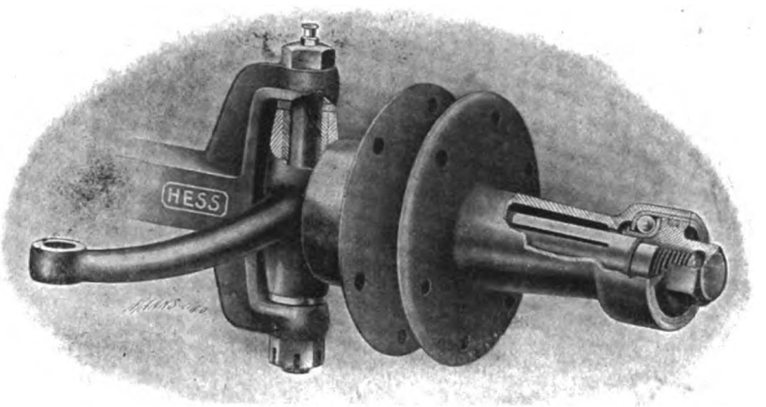
Hess High Wheel Motor Buggy Axles



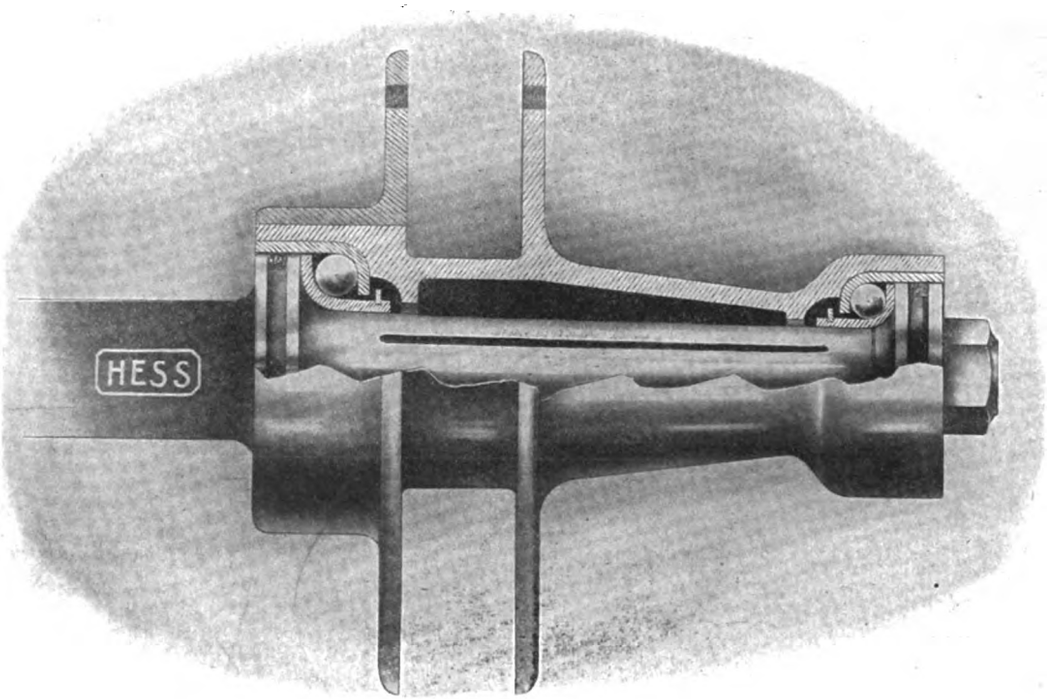
Ball-Bearing Axles especially adapted for use on the lighter class of Automobiles of the high or low wheel type.

Front Axle Complete.

In the construction of our ball bearings we employ an absolutely new feature in that the bearings themselves are units, that is to say, the cups, cones and balls always remain together, whether in or out of the hub of the wheel. This means that it is impossible to disturb or lose any of the balls, and that when removed from the hub these bearings may be placed aside complete, without the necessity of removing the lubricant, and without risk of fouling the bearings with any foreign matter. Each unit consists of a cone, a cup, a snap retaining washer, and the balls.



Artillery hub mounted on the steering knuckle of the front axle.



We are also prepared to furnish ball-bearing boxes for use in sarven or any other wood hub wheel, as well as plain friction boxes, all to interchange with our axles. We also manufacture all kinds and styles of auto springs.

SEND FOR CATALOGUE.

The Unit Bearings Installed in an Artillery Hub, and Mounted on the Rear Axle Spindle.

The Hess Spring and Axle Co., Carthage, Ohio

Digitized by Google

THE ATLAS BOLT & SCREW Co
CLEVELAND, OHIO.

TIRE BOLTS

RIVETS

CARRIAGE BOLTS

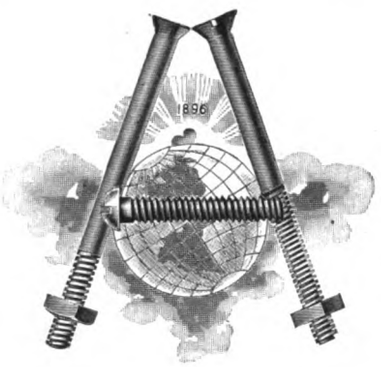
MACHINE SCREWS

HEX. & SQ. IRON & BRASS MACHINE SCREW NUTS

SPECIAL BOLTS & SCREWS











"ATLAS" BRAND



ALWAYS THE BEST



Catalogue and Samples on Request

THE HUB C.

Digitized by Google

FLANDRAU & COMPANY

DANIEL T. WILSON (only)

BUILDERS OF

CARRIAGES AND AUTOMOBILE BODIES

Nos. 406, 408, 410, 412 Broome Street

(Lafayette Street to Cleveland Place)

NEW YORK

Cable "Flandrau" Telephone "Spring 45-46"

ESTABLISHED 1838

James Cunningham, Son & Co.

MAKERS OF

Fine Carriages, Hearses, Casket Wagons, Ambulances, Etc.

Factory: ROCHESTER, N. Y.

Repositories: **New York, 231 W. 50th Street**
Chicago, 557 Wabash Avenue
Boston, 56-60 Sudbury Street
St. Louis, 2016-2020 Locust St.

"The Quality Goes In Before the Name Goes On"

Please mention "The Hub" when you write.

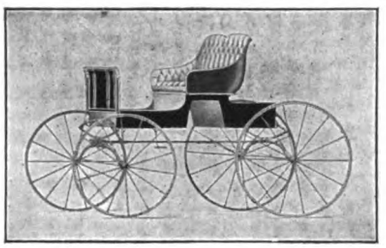
Digitized by Google

Haydock-Cincinnati

A REAL HINT.

"THE NEW HAYDOCK"

That Totally Different Line



NO. 114 AUTO CUTUNDER

Are you looking to increase those vehicle sales?

At the prices you pay, are you entirely satisfied with the style, proportions and general quality of your present line?

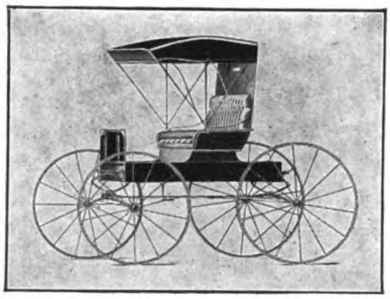


NO. 112 AUTO BIKE

Would you be interested in knowing why Haydock vehicles will be better sellers to your trade?

You can't imagine the beauty and style of the New Haydock—its graceful proportions and excellent material quality. The whole line is different.

We are so enthusiastic over our 1909 line that we want every good dealer to know more about it. Can we count on you to look us over at



NO. 158 HAYDOCK LEADER

THE CINCINNATI SHOW

November 9 to 14, 1908.

If you cannot arrange to come to the show, do not fail to get our new 1909 catalog. It's brimful of good sensible vehicle information and contains a full line of the newest thing on wheels.

Shall we mail you the book and quote you prices?

THE T. T. HAYDOCK CARRIAGE COMPANY.

CINCINNATI,————————OHIO.



NO. 140 AUTO SEAT LEADER

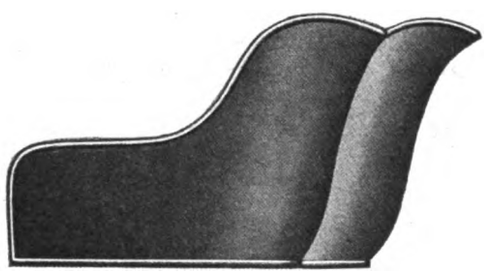
Haydock-Cincinnati

Haydock-Cincinnati

Haydock-Cincinnati

The Millcreek Wagon Co.,

Cincinnati, Ohio.



Manufacturers of

Bodies and Seats in the White

For the

Wholesale Trade only.

Material and Workmanship the best.

Send us your Catalogue—Let us figure with you.

Capacity, Two Hundred and Fifty Bodies and Seats Per Day.

Digitized by Google

WHEELS

No Matter Where

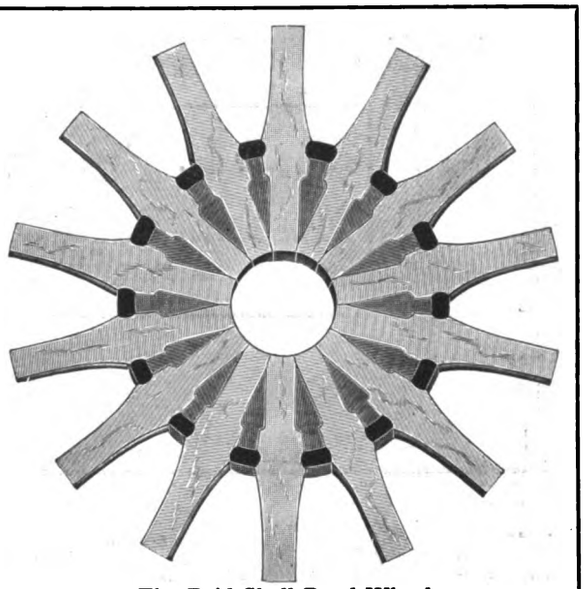
YOU HAVE BEEN BUYING

WHEELS

IT WILL PAY YOU TO CONSULT US

Our Prices Just a Little Lower Than Those of Anybody Else

Write Before Placing the Next Order



The Reid Shell Band Wheel



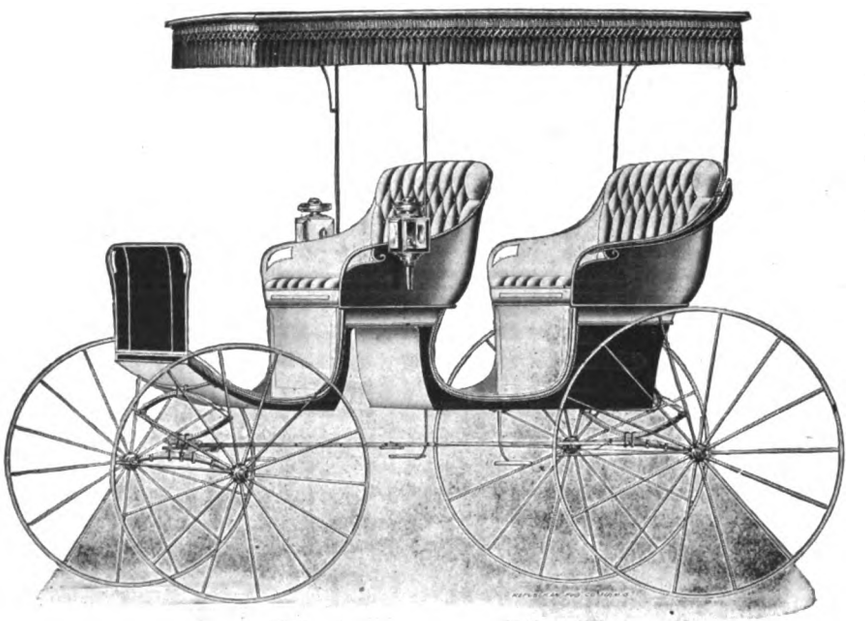
Union City Wheel Co.

UNION CITY, INDIANA

Strong—Neat—Durable

The STAVER LINE Stands for Quality

In Every Department of Fine Vehicle Construction



SOME REASONS WHY

Staver Axles, our special device with set screws in axle nuts for taking up the wear of the washers and admitting of a perfect adjustment of the wheels.

Streator Top Lowering Attachment, used only on our buggies.

Staver Auto Seat. Built in our own shops in a most substantial way, shifting rail top.

Special Fifth Wheel. Never breaks, never rattles.

Solid Foot Dash.

Steel Frame Boot.

Easy Riding Springs.

Excellence in finish in every detail.

Ask for our booklet, **"How Staver Buggies are Built."** It has many good points in carriage salesmanship.

STAVER CARRIAGE CO. - - - - Chicago, Illinois

Please mention "The Hub" when you write.

Digitized by Google



BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.

The Geo. R. Carter Co.

Manufacturers of

Leather Specialties for Carriages and Automobiles

Also all kinds of

Shaft, Pole and Automobile Straps.

CARRIAGE LEATHER EITHER IN THE HIDE OR CUT TO PATTERN

Our prices are reasonable, our service prompt.

Connersville, Indiana.

THE

American Pole and Shaft Co.

Wholesale Manufacturers of

POLES and SHAFTS

Ironed in the White and Painted.

NecKyoKes and Centers. All Kinds of Straps.

We have our own **Bending Plant**, own and operate branch **Saw Mills** for cutting our raw material, which we buy in large tracts of standing timber.

Ironing Plant and Warehouses:

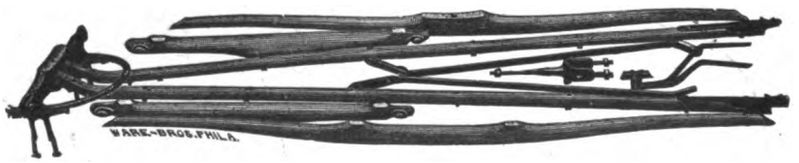
South and Depot Sts.

Bending Plant and Saw Mill:

Court and McLean Sts.

CINCINNATI - - - - - - - - OHIO

"OLD RELIABLE"



IRONED-UP SETS COMPLETE AND ALL STYLES OF FINISHED

Gear Woods

The J. A. & D. P. COOPER CO. **Struthers, Ohio**

Digitized by Google

CRANE & MacMAHON, Inc.

SOLE MANUFACTURERS AND EXPORTERS OF

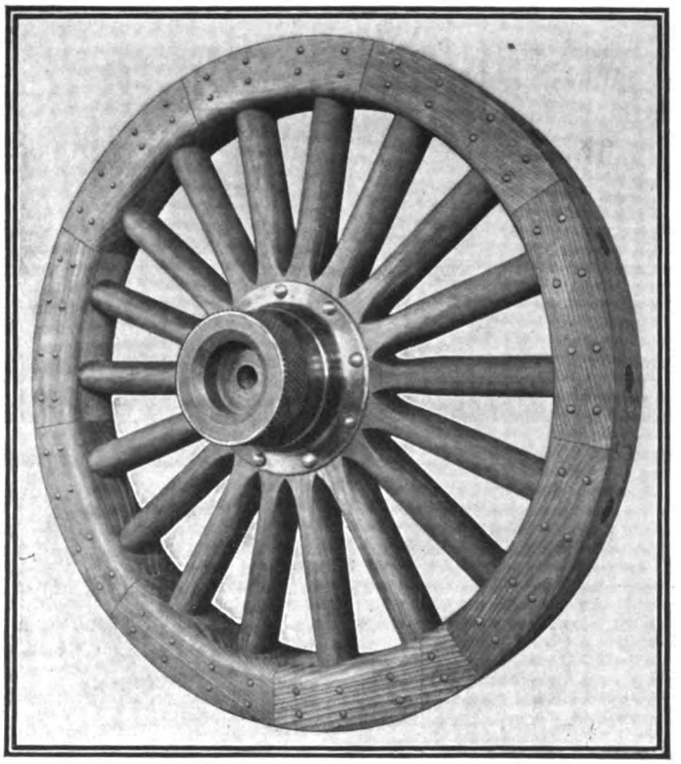
HICKORY NUT ACORN and STAR BRANDS

—OF—

Wagon, Carriage and Auto Woodstock, Wheels, Spokes, Rims, Hubs, Etc.

Heavy Wheels

"AGORN BRANO"
made with
Oak Spokes
and
Oak Felloes



Medium Wheels

"Hickory Nut Brand"
made with
Second Growth
Hickory Spokes
and
Hickory Rims

High Grade, Medium and Heavy Vehicle Wheels; Sarven, Warner and Wood Hubs; Rubber and Steel Tires Applied.

Factories:
ST. MARYS WHEEL & SPOKE CO., ST. MARYS, OHIO
VA. & N. C. WHEEL CO., - - - - RICHMOND, VA.

FOR EXPORT CATALOGUE AND PRICES ADDRESS

CRANE & MacMAHON, Inc.

8-10 BRIDGE STREET NEW YORK

THE DOMESTIC CATALOGUE WILL BE FURNISHED FROM THE FACTORIES.

Digitized by Google

PIONEER BRAND



Send for Our Book

We would like to have permission to send you a copy of our Catalogue, showing the different styles and sizes of poles and shafts manufactured by us.

The **PIONEER BRAND** has been brought to a standard of excellence in quality and style, the result of years of labor and study of the trade's wants, and is recognized as the peer, as is attested to by the most critical manufacturers, and is demanded by all buyers of vehicles throughout the country.

Address all communications to

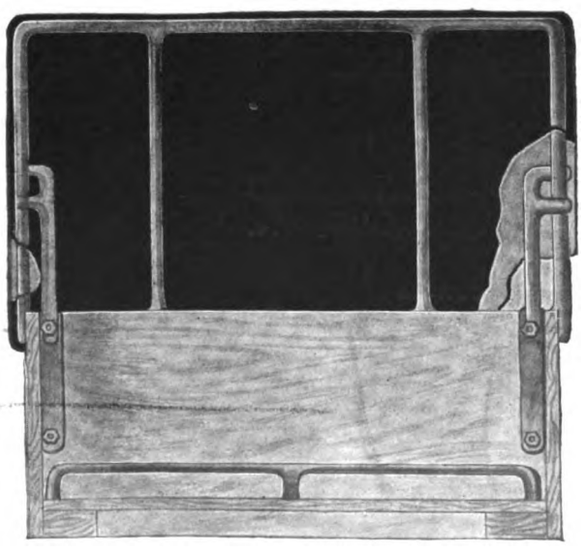
The Pioneer Pole and Shaft Co., PIQUA, OHIO

IRONING FACTORIES—Anderson, Ind.; Troy, Ohio; Sidney, Ohio; Cincinnati, Ohio; Canton, Ohio; St. Louis, Mo.
BENDING FACTORIES—Piqua, Ohio; Troy, Ohio; Akron, Ohio; Wellington, Ohio; Ashtabula, Ohio; Muncie, Ind.; Anderson, Ind.; Memphis, Tenn.

Look! Take Notice! See!

Our New Dash Brace

is designed to be used on any style dash, and bracing the dash more rigid than a solid foot. Our **Prop Blocks** and **Washers,** also all styles of **Roll-Up Straps,** are the finest in the market—and at no higher price. Try a sample lot and compare with what you are using .



A Neat and Rigid Brace Easily Attached. No More Broken Dashes.

We Know and want You to Know

That our Dash Frames, Leather, Stitching, Edges and Padding are the best made, which we guarantee

THE INDIANAPOLIS DASH COMPANY

INDIANAPOLIS, IND.

Digitized by Google

Greetings to you and yours, and many wishes for your continued success

In **1869** we began advertising with you

Phineas Jones & Company

305-311 Market Street

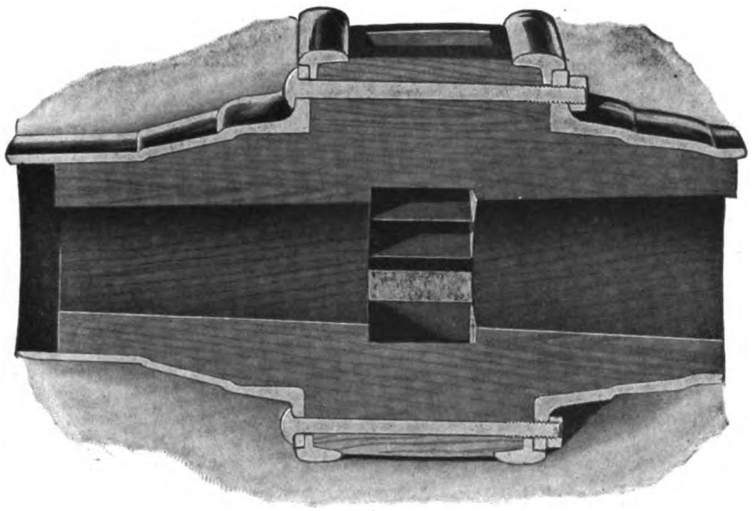
NEWARK, N. J.

Makers of the **"Best on Earth"** Vehicle Wheels

Kantsamore

Digitized by Google

The American Wood Block Co., Delphos, O.



SECTIONAL VIEW.

Hub Blocks

Green—Air and Kiln Dried. Sold by grade or timber run. Compressed blocks or otherwise. 3 in. to 12 in, diameter. Stock kept up to standard quality and ready for shipment at all times.

GILLETTE'S

"IDEAL"

HUB

It stands the Racket

The **IDEAL** hub makes the strongest wheel. Repairs are less than on any other style; actual use has proven these facts.

IDEAL is metal protected, wood to wood center, means elasticity; simplicity of construction, easily and quickly repaired, driven spokes best of all, no metal to corrode.

IDEAL has the patented inverted flange that prevents lateral strain.

IDEAL means less tire resetting.

Try it—it is guaranteed.

We want the wheel makers to use the **IDEAL** in their wheels.

The American Wood Block Co.

DELPHOS, OHIO

HUB BLOCKS HUBS DIMENSION STOCK

THE MILLS-ELLSWORTH CO.

KEOKUK, IOWA

MANUFACTURERS OF

Shafts, Poles, Singletrees and Doubletrees

We Sell Only to the Wholesale Carriage and Hardware Trade

Write for Price Lists and Discounts

Digitized by Google

MENU FOR 1909

PONTIAC BUGGY COMPANY

MAKERS OF

"FORGED STEEL VEHICLES"

CONSISTING OF

BUGGIES, CONCORDS, RUNABOUTS, PHAETONS, STANHOPES, SURREYS AND PARK WAGONS.

"CRESCENT VEHICLES"

CONSISTING OF

BUGGIES, DRIVING WAGONS, ROAD WAGONS, SURREYS AND CARTS.

"CLOVER LEAF VEHICLES"

CONSISTING OF

SPRING WAGONS AND HACKS, DELIVERY AND EXPRESS WAGONS, DRAYS AND TRUCKS.

FACTORIES AND MAIN OFFICE

PONTIAC, MICHIGAN



From the same material one man builds a mansion, another a hut — Bill

THE Pioneer Shop has no exclusive patents, secret methods or special material. What it has is skilled mechanics of wide experience, a knowledge of what is appropriate and practical, and a willingness to back up outside richness with inside quality.

Take these two Top Prop Nuts



No. 200—Japanned



No. 209—Polished Brass or Nickel-Plated

NOTHING peculiar about the stuff they are made of. Yet they have a certain style and smartness that lifts them above the ordinary. No. 200 is Japanned; No. 209 comes in polished brass for auto tops or heavy nickel-plate for buggies. Both have plain, oval tops and are an inch and seven-sixteenths in diameter. The pattern is new and exclusive. Order by the numbers.

NO huts in the "Pioneer" line—all mansions, inside and out. Give your tops the quality touch. The address is

CRANDAL, STONE & CO.

Binghamton, N.Y.

Digitized by Google

Carriage Enameled

OIL CLOTH



THAT HAS THE TRADE MARK **"MERITAS"** STAMPED ON THE BACK IS THE FINEST IN

Quality and Finish

Because of its Superior Construction it stands the wear and tear

You can depend on "Meritas" as being absolutely the best

It is built for service and is guaranteed by the world's largest makers

MERITAS TRADE MARK STANDARD OTC COMPANY REGISTERED OIL CLOTH

Standard Oil Cloth Co.

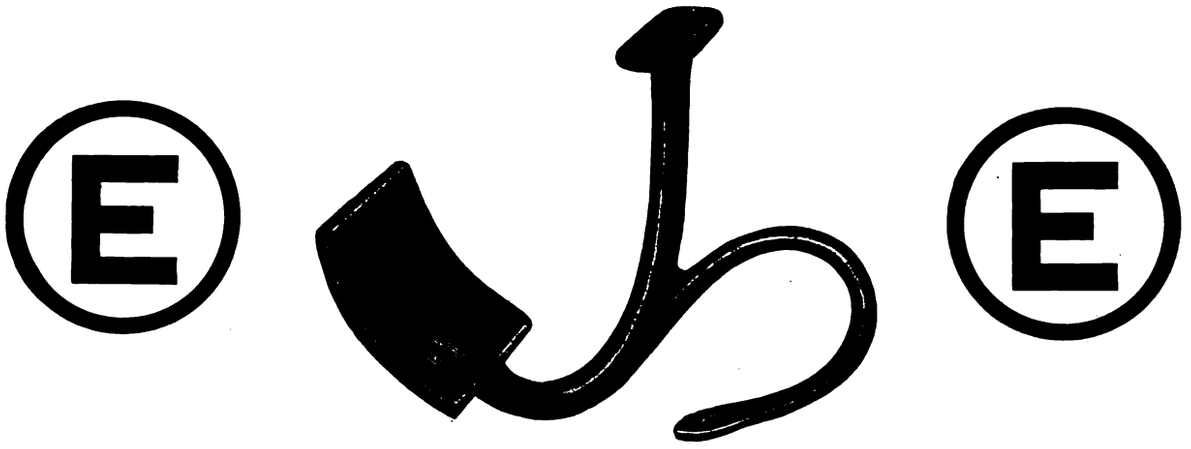
320 Broadway

New York

MERITAS TRADE MARK STANDARD OTC COMPANY REGISTERED OIL CLOTH

Please mention "The Hub" when you write.

Digitized by Google



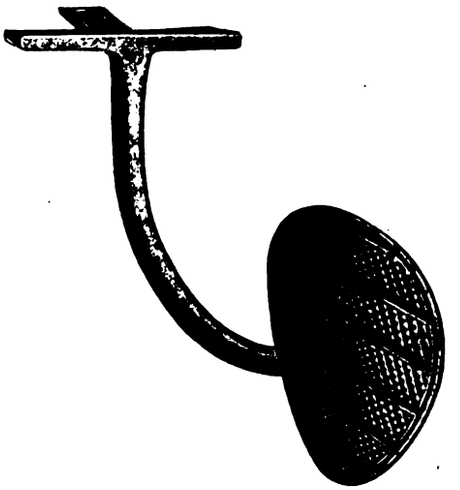
STEP up and see the Superior Quality of



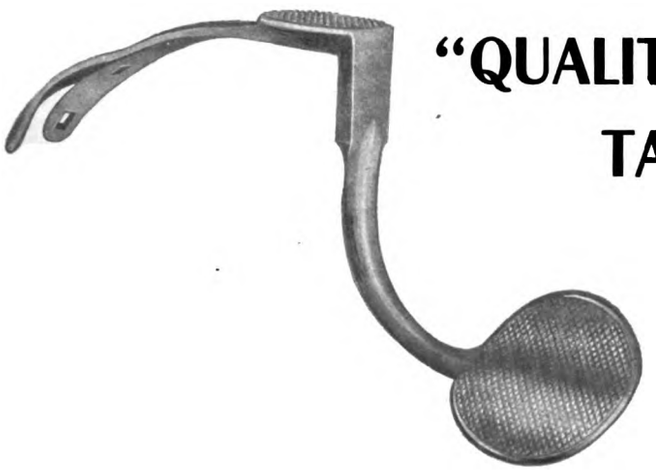
HIGH GRADE
CARRIAGE AND WAGON
HARDWARE
MADE BY

The Eberhard Mfg. Co.

CLEVELAND, OHIO.



These Malleable Iron Steps were Cold Bent

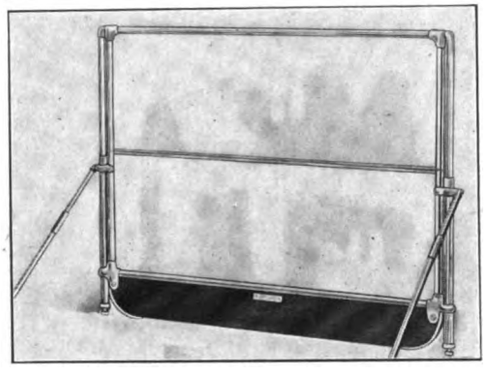


"QUALITY TALKS"



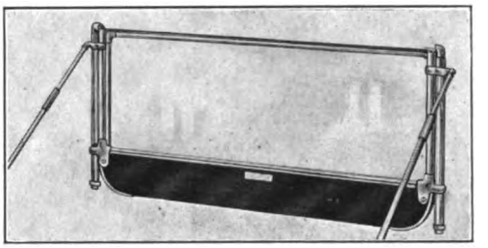
Digitized by Google

WILL NOT RATTLE—TELESCOPE WIND SHIELD





Try one and be convinced. Get a Wind Shield that is all we claim for it—absolutely the best on the market; one for which you need never make an apology; one that is not only a Wind Shield but an improvement to any car.





BURTRAM & LAMOREAUX,

72 Fort Street East, Detroit, Mich.

Our Carriage or Spring Edge Cushion Frame



Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.

NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

For Weak or Overloaded Springs.

VICTOR STEEL SPRING BUFFERS

Save wagon, prevent breakdowns, and add materially to the carrying capacity. If your dealer does not have them write to us direct.



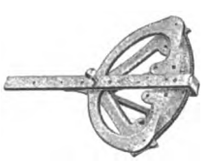
Made in Four Sizes: 0, 1 1-4 in. spring & under; 1, 1-4 in. to 1 1-2 in. spring; 2, 1 1-2 in. to 2 in. spring; 3, 2 in. to 2 in. spring.

Carrying capacity of each spring: No. 0, 400 lbs.; 1, 750 lbs.; 2, 1000 lbs.; 3, 1250 lbs.

Manuf'd by INDIANAPOLIS BOLSTER SPRING CO.
INDIANAPOLIS, INDIANA.

National Safety Short-Turning Fifth Wheels

Are Giving Universal Satisfaction.
Ask Your Dealer for Them.
National Safety Fifth Wheel Co., Lancaster, Pa.



Style C.

NEW YORK CITY

THE HERMITAGE

A CLUB HOTEL FOR MEN

The name tells the story.

Seventh Ave. and Forty-second St.

Junction of Broadway.



Restaurant on the street floor—a restaurant where ladies are welcome.

Every other part of the house exclusively for men.

Telephones in every room.

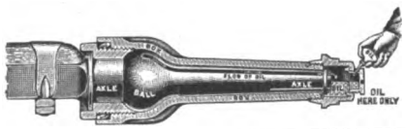
Respectful, quiet, obedient and alert Japanese servants.

Bedroom and bath $2.00 a day upward.

Send for Booklet.

T. F. PADDELL, Proprietor

IT DOES THE TRICK R. F. D. SPECIAL



This axle runs easier than any other, and requires no attention. IT'S A WONDER Ask why. We can prove it.

STANDARD BALL AXLE WORKS, Lancaster, Pa.

LOWEST PRICES. *PROMPT SHIPMENTS.* *SUPERIOR QUALITY.*

TOLEDO **LANDERS BROTHERS CO.** **BOSTON**

WE ARE THE PIONEERS IN THE

SHEETINGS, WEBBING — 32 GRADES SINGLE DOUBLE THREE-PLY — **BUCKRAM** LINE — FOUR-PLY AND CANVAS LINED — DUCKS, WADDING

Celluloid Sheets, Enameled Muslins, Drills and Ducks

SCRIM. *RATTAN MOULDING.* *BATTS.* *OILED DUCK.* *OIL CARPET.*

Digitized by Google

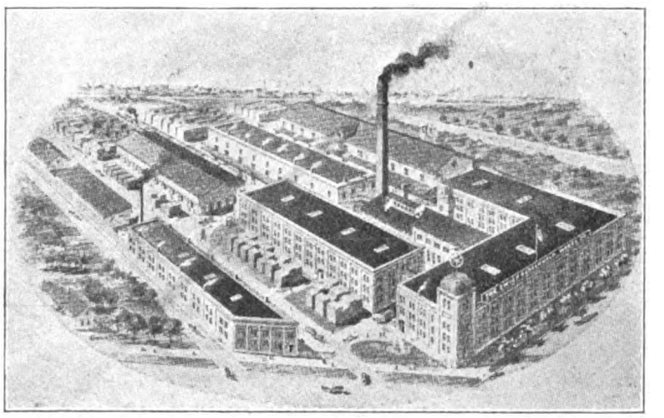
VEHICLE WHEELS

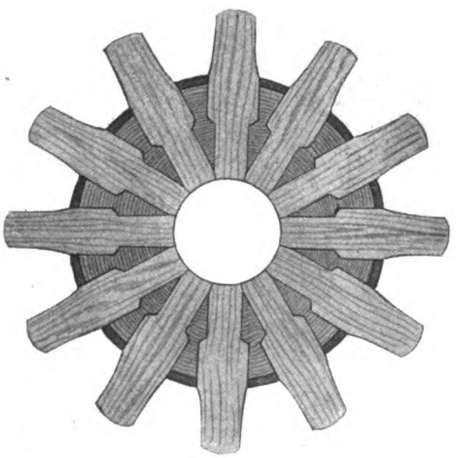
WITH OR WITHOUT TIRES

WE ARE THE ORIGINATORS OF THE

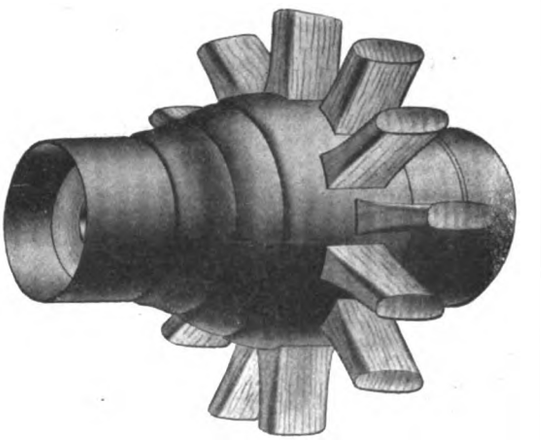
DEEP SHOULDER SPOKE SHELL BAND WHEEL

EVERY SET GUARANTEED.





Note the Construction



We have the plant, the stock, the workmen, to turn out wheels of unsurpassed quality at short notice

The Zwick & Greenwald Wheel Co.

Dayton, Ohio

Digitized by Google

The Invincible Schacht

1909 MODEL NOW READY

SIMPLE EFFICIENT DURABLE ECONOMICAL

PERFECTION IN EVERY DETAIL



MODEL K.

16 H. P. water cooled motor. Friction drive, gearless and clutchless. 74-in. wheel base and 1 3-8 in. flat base rubber tires. We want good agents everywhere

Send for Art Catalogue. · Address, **H. HARRIS, Sales Mgr.**

THE SCHACHT MFG. CO. Cincinnati, O.

RIDE WITH US

Will be at New York Show, October 5th to 10th, Grand Central Palace

Digitized by Google



A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

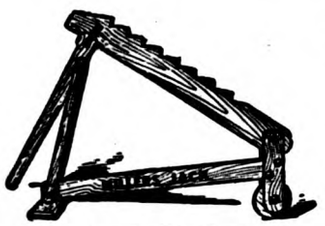
Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.



Made in four sizes. Nos. ½, 1, 2, and 3.

JACKS FOR BUGGIES AND WAGONS

Miller Patent Wagon Jack Made by

J. V. HANKINSON,

Successor to THOS. MILLER,

FRANKLIN, OHIO.

Write for particulars and prices.

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

Let us send you Catalogue and Price List.

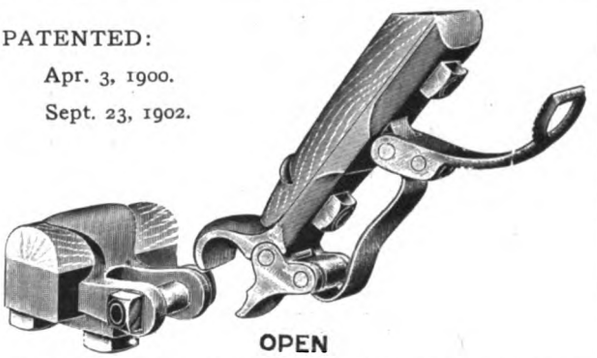
American Roller Bearing Fifth Wheel Co.

745 THIRD AVE., BROOKLYN, N. Y.

The

HOLD FAST COUPLER

PATENTED:
Apr. 3, 1900.
Sept. 23, 1902.



OPEN

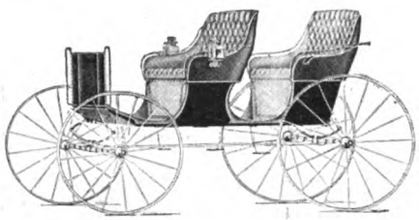
All Steel All Right All the Time

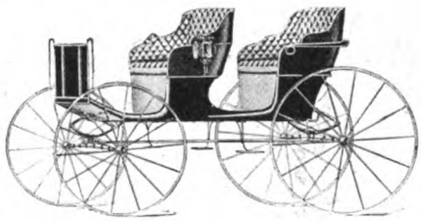
Fits any bolt or lug from 7-16 to 3-16 inches in diameter. No bushings of any kind required. Takes up its own wear. One hand, the ony tool required to operate it. Quick as a Wink. Silent as the Grave. Drop forged from bar STEEL. Crucible STEEL Spring, every one right. Workmanship the Best. Nothing cheap about it but the Price. STEEL'S the stuff, no Malleable Iron in the Holdfast. Made "a little better than seems necessary." **We can furnish the Holdfast with Weldless long length shaft irons 28 to 40 ins. long, and with 8-inch "T" pieces for cross-bar.** Irons are 5-16 by 1 1-8 inches in cross section, with quarter round edge. The Holdfast has the well-known BRADLEY quality, the ALL RIGHT brand. If your are interested, write for prices or order a sample pair.

C. C. Bradley & Son

SYRACUSE, NEW YORK

Digitized by Google





1909 PARRY BUGGIES

A marked improvement over previous years, both in styles and quality.

We have many new features that will add greatly to the wearing qualities of Parry Buggies and will make them "easy sellers" for you.

A few representative styles will be shown at the

NEW YORK SHOW

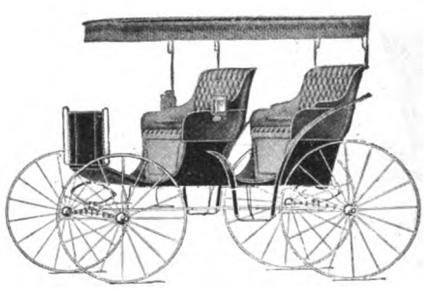
on the First Exposition Floor. Our 1909 catalogue and illustrated price list are now ready for distribution. Send us your name now, so as to be the first to receive copies.

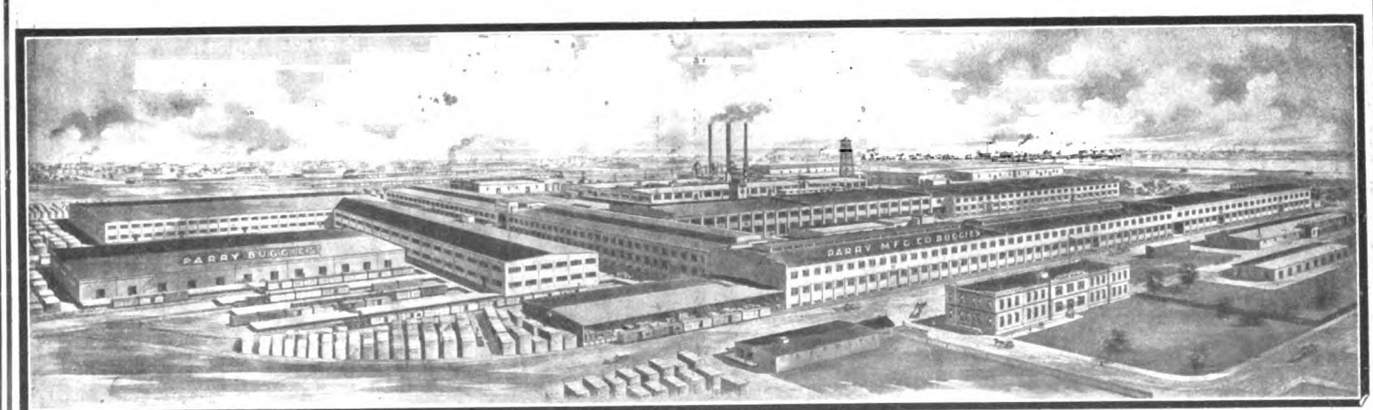
The accompanying illustrations will convey an idea of the attractiveness of our 1909 line.

Parry Mfg. Co.
Indianapolis, Ind.



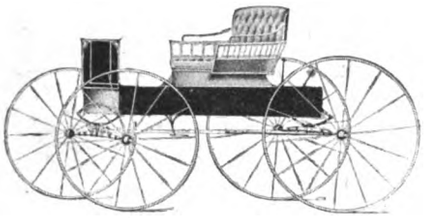
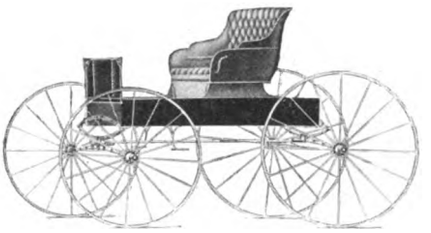
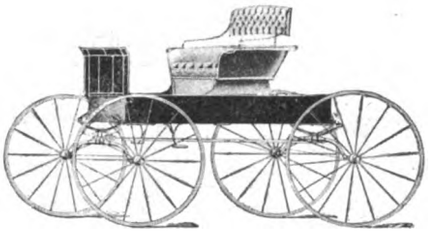




The Largest and Best Equipped Carriage Factory in the World.

Digitized by Google

Your Golden Anniversary

When it comes to you will your reminiscences be a pleasure or will they be fraught with regrets?

Take a little time now and analyze your business; see if you cannot find ways whereby you can increase it.

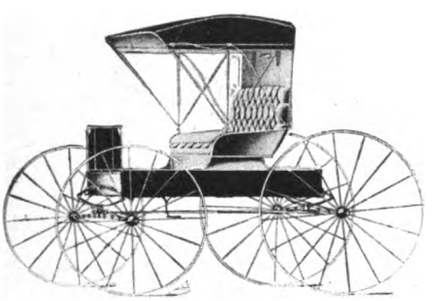
The line you are handling has much to do with the success of your future business.

When you sell your customer a buggy, will it prove satisfactory to him so that he will recommend your line to another, bringing to you additional sales?

Think this over, and before you decide on next season's stock, look well into the merits of




Parry Buggies




Our 1909 styles are unexcelled and we feel confident that our line this year will be a winner with your trade.

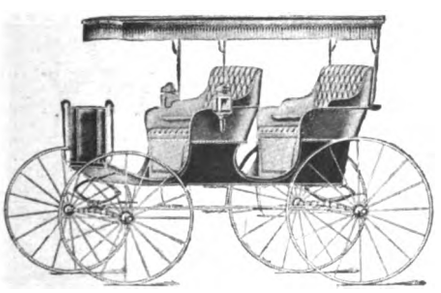
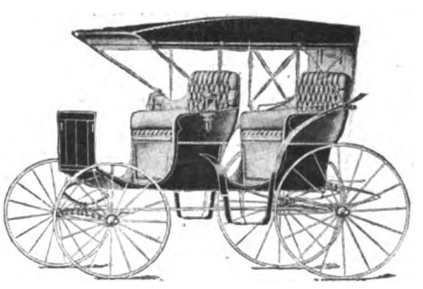
Just a trial order to convince you.

Write for our large 1909 catalog to-day, while you are thinking about it.




Parry Mfg. Co.

Indianapolis, Ind.

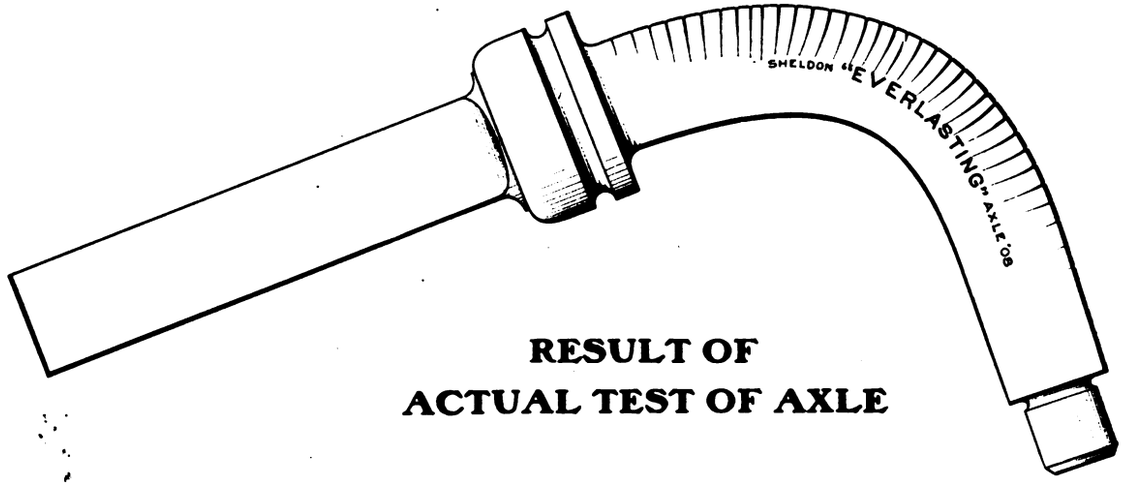

Digitized by Google

SHELDON AXLE COMPANY'S

"EVERLASTING"

The Axle You Have Been Looking For

Hard as Glass, yet Unbreakable. Easy Running, Never Wears Out. So Hard a File Won't Touch It. Never Wears Flat on Bottom of Spindle.



RESULT OF ACTUAL TEST OF AXLE

IT IS THAT

Old-fashioned "STEEL CONVERTED" axle made at a popular price

Our "Everlasting" Concord Express is the highest grade express axle in the world



The "Everlasting" is made in **the style you now use—no change of spindle.** Don't compare "Everlasting" with the common "case hardened" axles on the market.

MADE ONLY BY

SHELDON AXLE COMPANY

The Largest Spring and Axle Manufactory in the World

WILKES-BARRE, PENNSYLVANIA

Digitized by Google

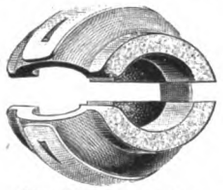
The Hannan Shaft Coupler

The Only Ball-Bearing Coupler Equipped with Brass Bushings. Will Outwear Any Vehicle.



[Patented June 18, 1907]

Brass bushings on ball-bearing couplers are the **ideal bushings** and destined to become the bushings of the future because they are practically **indestructible** and **cannot become lost.** Everybody long since condemned the leather bushings as a miserable make-shift. They wear out readily and are easily lost.



Our New Bushing.

We also furnish the Hannan Coupler with Rawhide Bushings cupped to shape, attached with a spring metal fastening which holds the bushings firmly on the ball and **prevents it being** lost. This is a vast improvement on others trying to attach it with a flimsy wire ring.

Write for Samples and Prices

SOLE MANUFACTURERS

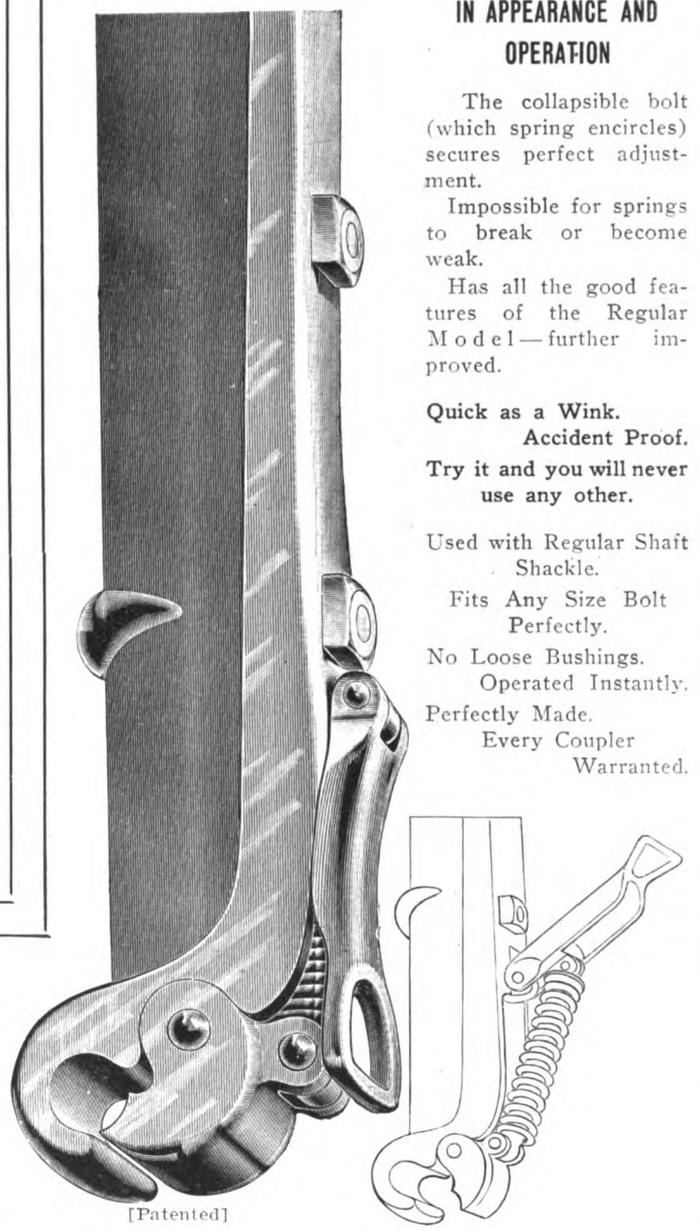
Metal Stamping Company, New York.

THE PERFECTED MODEL

OF THE

Standard Coupler

IS ABSOLUTE PERFECTION IN APPEARANCE AND OPERATION



[Patented]

The collapsible bolt (which spring encircles) secures perfect adjustment.

Impossible for springs to break or become weak.

Has all the good features of the Regular Model—further improved.

Quick as a Wink.
Accident Proof.
Try it and you will never use any other.

Used with Regular Shaft Shackle.

Fits Any Size Bolt Perfectly.

No Loose Bushings.
Operated Instantly.

Perfectly Made.
Every Coupler Warranted.

Send for New Catalogue containing over Four Hundred [400] devices used by the Carriage and Wagon Trade.

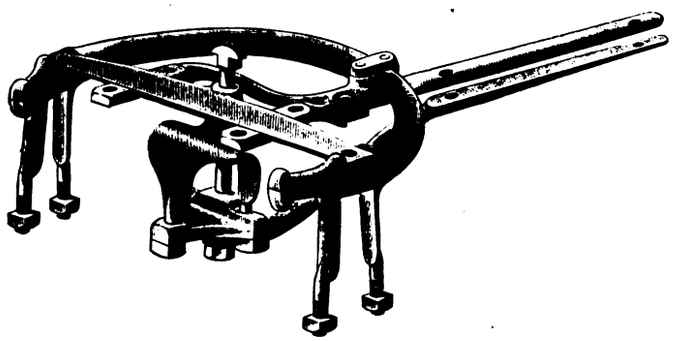
Digitized by Google

FIFTH WHEELS

GREATEST LINE

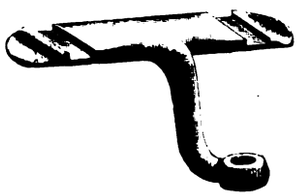


Detachable Fork Perch Connection Used in 1908 Gear Set.



1908 Single-Reach Gear Set.

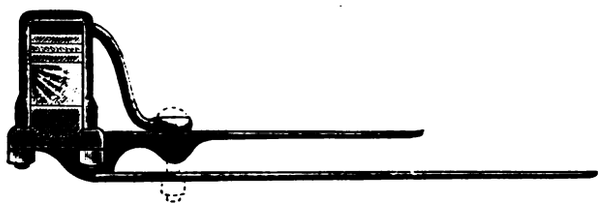
REAR PERCH WHEEL COMBINATION



Spring Stay.



Fork Connecting Iron.



Section Showing Construction.

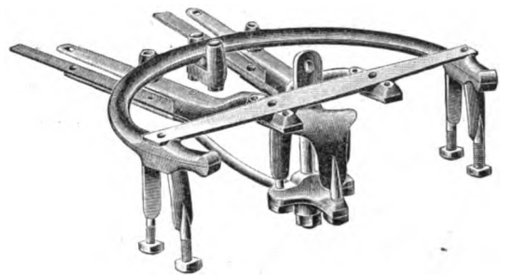
Latest Productions in Single-Reach Stunts

SEE OUR EXHIBIT AT THE

D. Wilcox Mfg. Co.

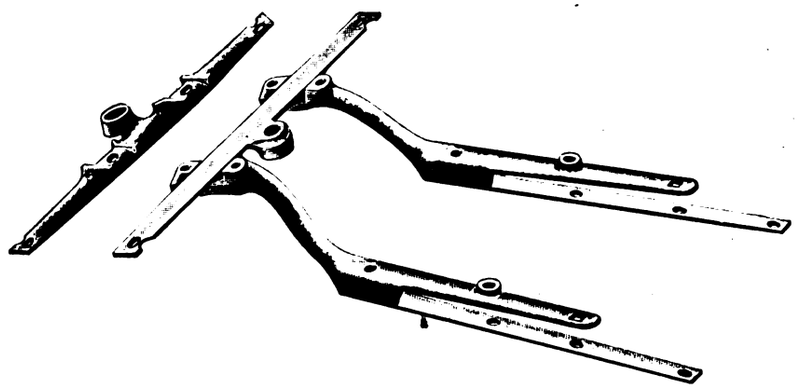
Digitized by Google

—FORGINGS
ON EARTH



(Patented)

1905-B—IMPROVED DOUBLE-REACH GEAR SET



(Patented)

1905-B—HEAD-BLOCK PLATE (Detachable)

Solid Spools for leveling fifth wheel; notch in head-block plate ends centers the king-bolt hole, facilitating assembling

BIG SHOW IN CHICAGO
Mechanicsburg, Pa.

Digitized by Google

JOHN A. GIFFORD & SON

(IN THE BUSINESS SINCE 1848)

Carriage and Wagon Materials and Automobile Hardware and Trimmings



Lamps, Lamp Covers and Oil Candles for Carriages, Wagons and All Kinds of Vehicles

ALSO A FULL LINE OF

Carriage Hardware, Mountings, Trimmings, Wheel and Wood Work

Have You Our Catalogue of Automobile Hardware and Trimmings?

FORTY YEARS' EXPERIENCE IN THE EXECUTION OF ORDERS FOR FOREIGN SHIPMENT

NEW YORK, U. S. A.

22 MURRAY STREET **25 PARK PLACE**

Digitized by Google

The Cleveland Bolt & Mfg. Co.

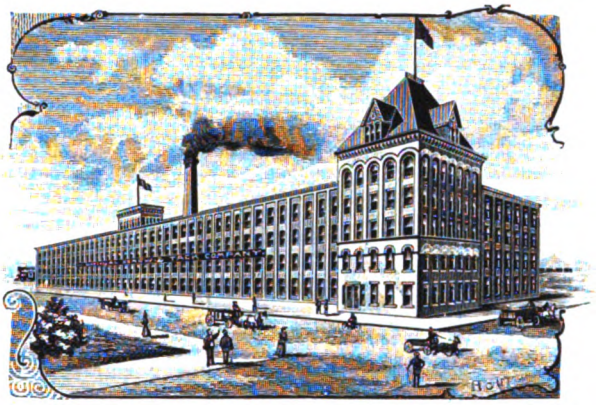
CLEVELAND, OHIO

Manufacturers of the

RIBBED CARRIAGE BOLT

(Patented)

A "High Grade" Carriage Bolt with "Philadelphia" Finish for the Discriminating Vehicle Builder



THE National Screw & Tack Co.

CLEVELAND, OHIO

Manufacturers of

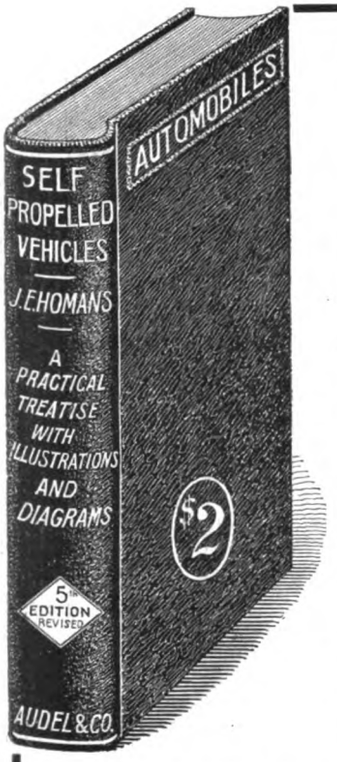
NATIONAL

Wood Screws
Machine Screws
Coach Screws
Cotters
Rivets

Tire Bolts
Fin Head Bolts
Carriage Bolts
Machine Bolts
Stove Bolts
Rods

Western Office:
166 LAKE STREET,
CHICAGO.

Digitized by Google



"Self-Propelled Vehicles"

Fifth Edition, Revised.

A practical treatise on the theory, construction, operation, care and management of all kinds of Automobiles.

By

JAMES E. HOMANS, A.M.

Contains 608 pages and upwards of 500 illustrations and diagrams, giving the essential details of construction and many important points on the successful operation of the various types of motor carriages driven by steam, gasoline and electricity.

This work is now the accepted standard, explaining the principles of construction and operation in a clear and helpful way. This book will be sent postpaid to any address in the United States, Mexico or Canada upon receipt of $2.00.

Address

TRADE NEWS PUBLISHING COMPANY

24 Murray Street, New York

Automobile Manufacturers

Write us for prices on Limousine, Touring Car or Runabout Bodies before placing contracts for your requirements.

Our Facilities enable us to handle any size order

GOOD WORK AND RIGHT PRICES.

O. J. BEAUDETT CO.

Pontiac, Michigan

HOTEL CUMBERLAND

NEW YORK

Southwest Cor. Broadway at Fifty-fourth St.

Near 50th St. Subway and 53d St. Elevated Stations and accessible to all surface lines.



Headquarters for Carriage and Automobile Trade

Ideal Location, Near Theatres, Shops and Central Park.

NEW AND FIREPROOF

STRICTLY FIRST-CLASS IN EVERY RESPECT

All Outside Rooms. No Carpets. All Hardwood Floors and Oriental Rugs.

European Plan.

Transient Rates, **$2.50** with Bath, and up.

Restaurant Unexcelled. Prices Reasonable.

SEND FOR BOOKLET.

HARRY P. STIMSON, *Formerly with Hotel Imperial.*

R. J. BINGHAM, *Formerly with Hotel Woodward.*

Build Your Own Auto

A GASOLINE ENGINE TO FIT ANY BUGGY or WAGON

LANDSMAN MOTOR CO.

908 Hickory St. ST. LOUIS, MO.

Write for Catalogue.

MANUFACTURERS

DESIRING FIRST-CLASS ILLUSTRATIONS OF THEIR PRODUCT, AT REASONABLE PRICES, SHOULD PERMIT US TO SUBMIT AN ESTIMATE.

Central Bureau of Engraving

COMMERCIAL ENGRAVERS

157-159 WILLIAM STREET, NEW YORK

Please mention "The Hub" when you write.

Digitized by Google

THE BRADLEY SHAFT COUPLING



OPEN

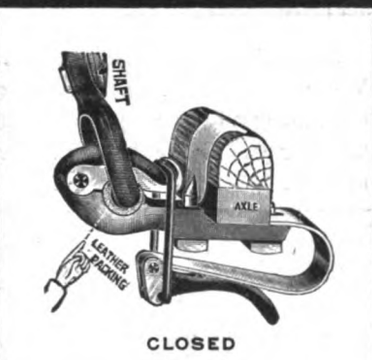
Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1½ in. in section.

C. C. BRADLEY & SON, Syracuse, N. Y.



CLOSED

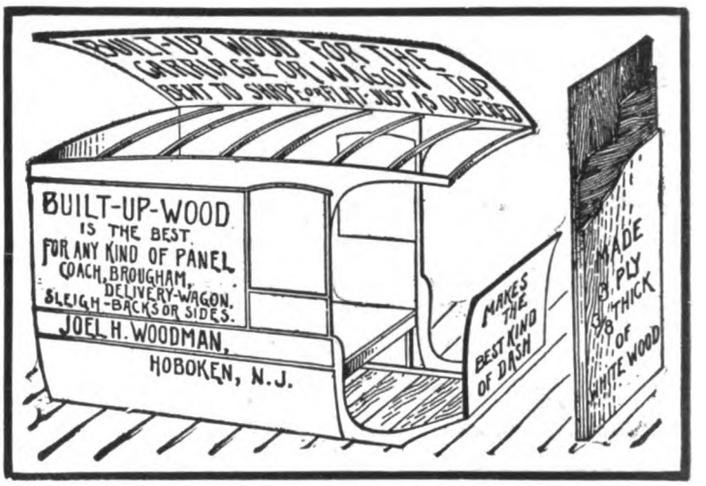
BRAZING SLEEVES


For Putting on Rubber Tires.
No Filing or Scarfing.


LINED UNLINED

H. F. WHITE, 111 E. Pearl St., Cincinnati, O.





While you are at the New York Show, October 5-10, or at the C. B. N, A., at Chicago, October 12-17, Come and See Us.

An Elegant Souvenir for the Ladies and a Useful One for the Men Has Been Provided

Drab Broadcloth Cleaner.
Whipcord Cloth Cleaner.
Bedford Cord Cloth Cleaner.
Blue, Green & Maroon Cloth Cleaner & Color Restorers.
Stain Remover.
Steel Dry Cleaning or Teasel.
Silk and Satin Cleaner.
Rust Remover.
Lace Dye, Blue, Green and Maroon.
Lace Polish.
Black Hearse Curtains and Hammer Cloth Dye.
Morocco Stuffing.
Morocco Dressing, Blue, Green, Black and Maroon.
Top Stuffing.
Top Buffing or Dressing.
Tan Leather Cleaner.
Enamel Leather Cleaner.
Enamel Leather Finish, Black, Green, Blue and Red.
Moth Destroyer.

NELSON'S CARRIAGE CLEANING COMPOUNDS

will interest you. Everything necessary to keep your stock new and trim. Send for Catalog, telling how to use each article.

JEWEL MFG. CO.
914 Marshall Boulevard CHICAGO, ILL.

Digitized by Google

ECCLES BALL-BEARING COUPLINGS

The cut shows our coupling bolted to axle, and the form our flat leather bushing takes when the shafts are placed and locked in the coupling. The leather can be securely fastened in by the user, by driving a soft wire nail through the small hole we drill, which clinches it.

When the shafts are removed, the bushing does not come out, but stays in the Coupling where it belongs. NO LOST BUSHINGS WHEN YOU USE OUR COUPLINGS.

We would like to send you our circular and have you try our Couplings. They will save you money.



See the clinch?

Patented June 11, 1907.

Patented Nov. 25, 1902.

The spring is pivoted at the front so that it can be turned forward out of the way of the wrench while clipping the Coupling to the axle.

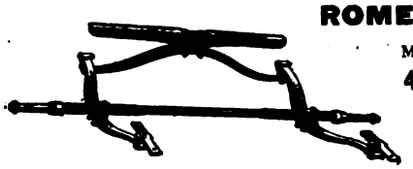
These are two of the good points, but there are plenty more desirable features in our Couplings.

We also have a Catalogue showing our full line of CARRIAGE and WAGON FORGINGS, all of which we make

RICHARD ECCLES COMPANY, AUBURN, N. Y.

FITCH GEAR CO.

ROME, N. Y., U. S. A.



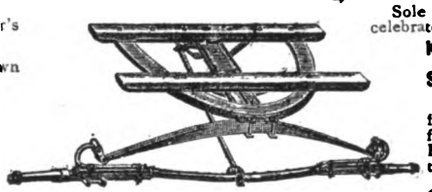
Manufacturers of over

40 STYLES of GEARS

From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.

Sole Manufacturers of the celebrated

Kramer Lowdown Short Turn Gear



Kramer's Patent Lowdown Gear.

It is the Finest Gear for Drop Centre-Body for Milk, Bakers' or Butchers' Wagons on the market.

Send for our No. 22 Catalogue, just out.

Journal for the Carriage and Automobile Trade

The Hub

Published Monthly at Two Dollars per Year

J. B. Koller & Company

Manufacturers of all kinds and sizes of

Finished Spokes and Bent Rims

Also all kinds of

SLEIGH, SLED AND BOB SLED RUNNERS

MECHANICSBURG, PA.

MILLER BROTHERS

Builders of

CARRIAGES

IN THE WHITE

AND

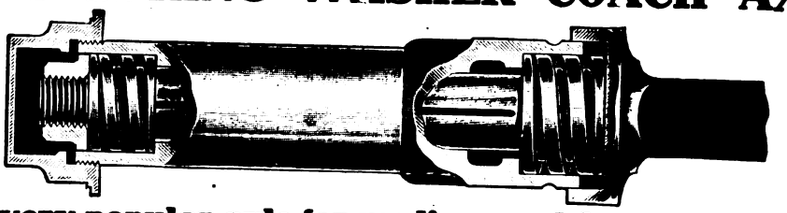
Automobile Bodies

AMESBURY, MASS.

Please mention "The Hub" when you write.

Digitized by Google

PRAY SPRING WASHER COACH AXLE



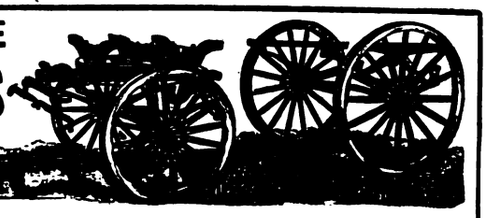
At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

DALZELL AXLE CO., South Egremont, Mass.

COMPLETE GEARS

As shown herewith, ready to receive body for light and heavy work, can be furnished promptly



Trussed Platform Wagon Gear Complete, Ready for Body.

In ordering, give full specifications, or such descriptions as will enable us to make up specifications.

Also Combination and Three-Spring Gears in several styles.

1,000 Styles and Sizes "SELLE GEARS." WRITE FOR Catalog No. 16



THE AKRON-SELLE GEAR CO., Akron, O., U. S. A.

The Fairfield Rubber Co.

Manufacturers of Carriage Cloth, Imitation Leather, etc. For Automobiles and Carriages

Fairfield - - - Connecticut

Headquarters for "The H. D. Smith & Co.'s" Carriage and Wagon Forgings

JACOB GERHAB

DEALER IN

Carriage Cloths, Leathers and Trimmings, Wagon and Cart Material

Salable prices and all information cheerfully furnished

158, 160, 162 and 164 North Third Street PHILADELPHIA, PA.

C. R. Wilson Body Company

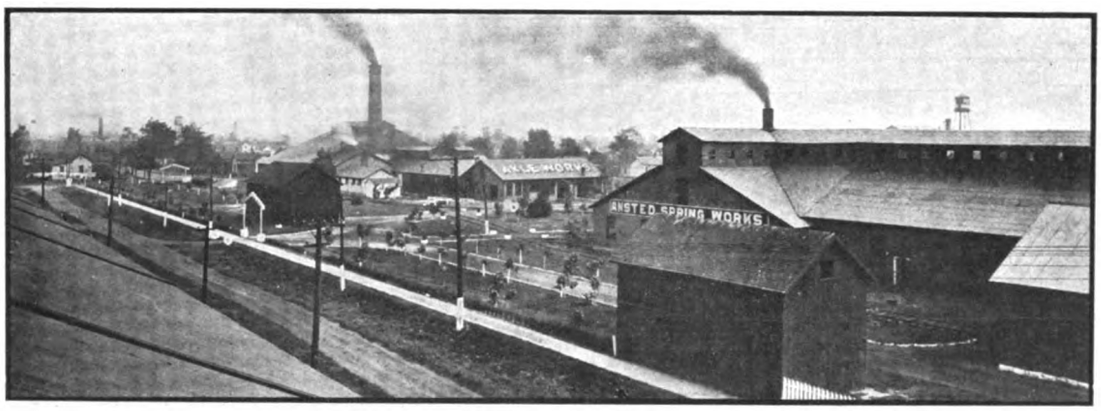
DESIGNERS AND MANUFACTURERS OF

Automobile Bodies

Detroit, Michigan

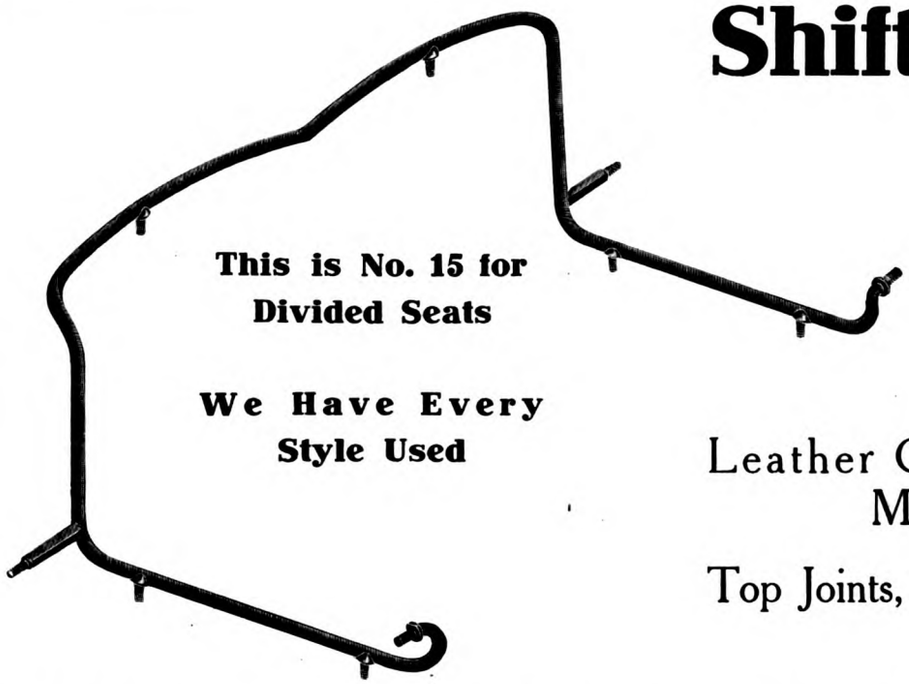
Please mention "The Hub" when you write.

Digitized by Google



ANSTED
SPRING
AND
AXLE
COMPANY

CONNERSVILLE
INDIANA



This is No. 15 for
Divided Seats

We Have Every
Style Used

Shifting Rails

FOR

Auto Buggy Seats

Leather Covered Bow Sockets
Made on Honor

Top Joints, Canopy Top Standards,
Etc., Etc.

CORTLAND FORGING COMPANY, Cortland, N. Y.

Home of AJAX Auto Bow Sockets

The LEWIS SPRING & AXLE CO.

JACKSON, MICHIGAN.

FINE CARRIAGE SPRINGS & AXLES

WRITE US FOR PRICES.

Digitized by Google

MR. DEALER:

Do you know that it it easier for you to get a long profit on McFarlan goods than on any other line sold in your territory?

The reason is easily understood when you see the work. Write for our new catalog, or come and see us at the Cincinnati show.

McFARLAN CARRIAGE CO.,

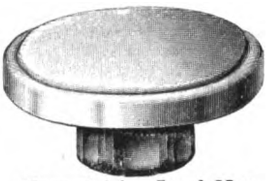
Connersville, Indiana

Digitized by Google

The Higgin Manufacturing Co. Newport, Kentucky



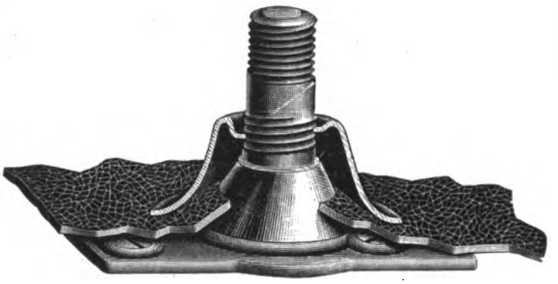
Higgin New Steel Rim.



New 1⅜ in. Steel Nut
Brass or Nickel.



Higgin New Steel Rim with Dust Cap.



Wrought Steel Prop.



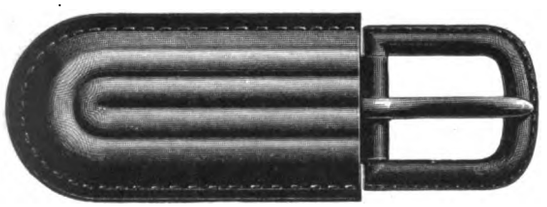
No. 11a. New Steel Nut. Japanned.



New 1⅜ in. Steel Nut.
Japanned.



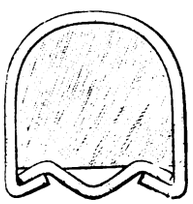
No. 11a. New Steel Nut. Japanned.
(Back View)



No. 8 Leather Buckle Loop.



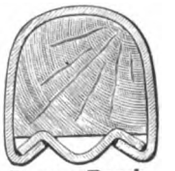
No. 250 Adjustable Curtain Fastener.



Surrey Perch
Sectional View.



The Higgin Steel Perch.



Buggy Perch.
Sectional View.

Let us tell you about it.
A PERCH THAT DOES NOT BREAK



No. 14 Leather Buckle Loop.

ADOPT THIS PERCH and your TROUBLES WILL END

The Higgin Manufacturing Co., Newport, Ky.

Digitized by Google

Chase Auto Top Fabrics

OUR COMPLETE LINE OF

Mackintosh Fabrics **Chase Leather**

and Chase Rubber

Single and Double Texture, is now ready for 1909. Many Specialties.

ALL LINES MADE IN OUR OWN MILLS

Samples and Prices on Request

MANUFACTURED ONLY BY

L. C. CHASE & CO., BOSTON, NEW YORK, CHICAGO

R. F. MONROE, Pres. and Gen. Man. J. M. PARKER, Secretary

Monroe Body Company

Successors to

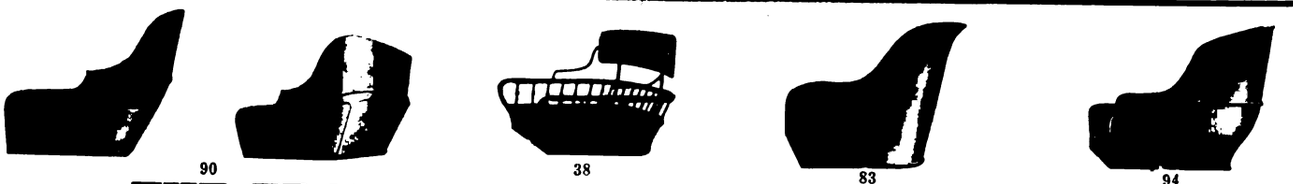
PONTIAC BODY CO., Pontiac, Mich. JACKSON BODY CO., Jackson, Mich.

Manufacturers of

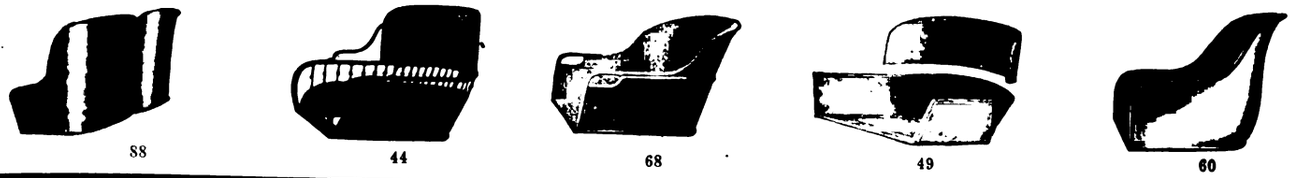
AUTOMOBILE BODIES EXCLUSIVELY

Limousine, Landau, Landaulette and Touring Car Bodies

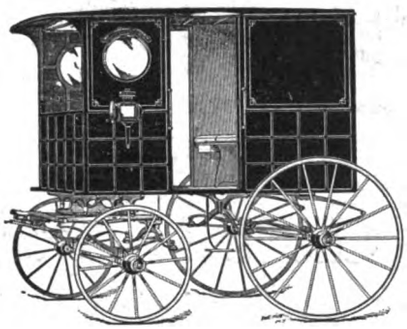
PONTIAC, MICHIGAN



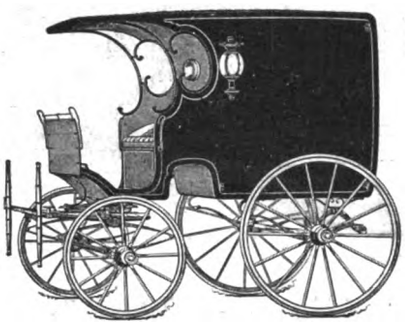
THE FRANTZ BODY MFG. CO., Akron Ohio



Digitized by Google



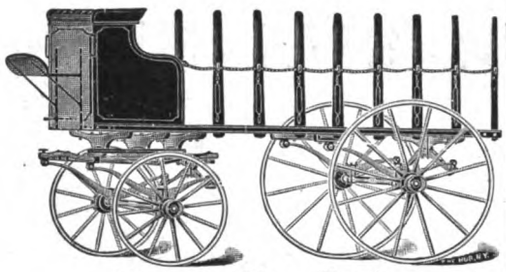
No. 112.—Milk Wagon.



No. 111.—Altman Wagon.



No. 113.—Grocery Wagon.



No. 122.—Flour Truck.

Electrotypes

of the vehicles presented on this page will be forwarded on receipt of

75 cts.

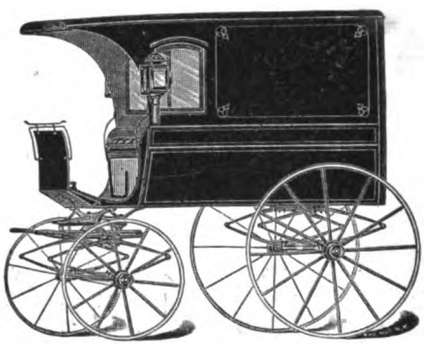
for each cut, to any address. Postage prepaid.

Catalogue

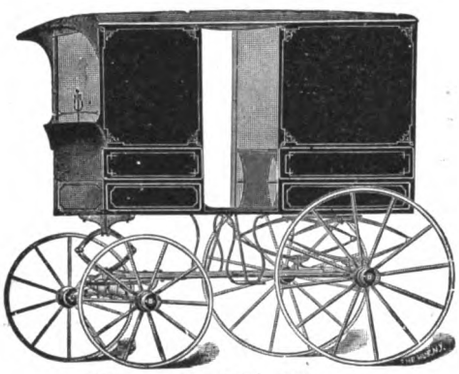
containing nearly 200 illustrations of carriages, wagons, sleighs, and miscellaneous cuts will be sent upon application.

Trade News Publishing Co.

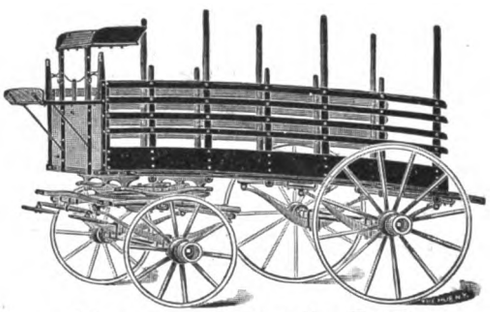
24-26 MURRAY ST. NEW YORK



No. 115.—Delivery Wagon.



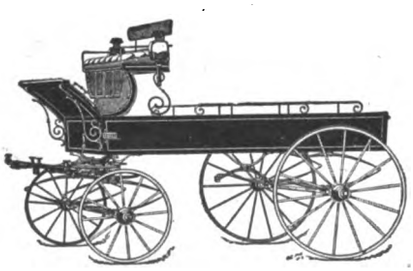
No. 116.—Milk Wagon.



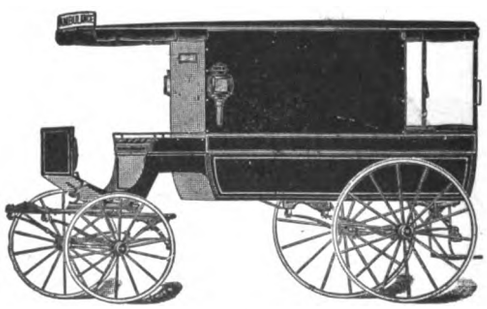
No. 117.—Merchandise Truck.



No. 114.—Delivery Wagon.



No. 124.—Delivery Wagon.



No. 118.—Ambulance.

Digitized by Google

THE ENGLISH & MERSICK Co

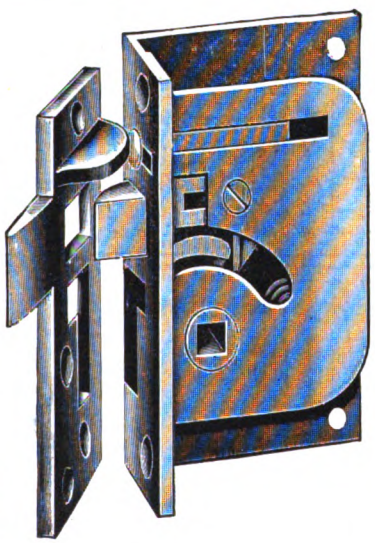
NEW HAVEN, CONN.

MANUFACTURERS OF

CARRIAGE & AUTOMOBILE

HARDWARE TRIMMINGS & SPECIALTIES

No. 999 Safety Door Lock



The only **absolute** Safety Auto Door Lock on the market.

Backed by a reputation of fifty-four years' standing, too.

We are pioneers and originators in the manufacture of Carriage and Automobile Locks.

Have you seen our new

ROTARY DOOR LOCK?

A radical departure in the manufacture of Locks.

No unsightly slot in finishing piece on top of door.

See "Billy" Bryan at the Carriage Builders' Show at Chicago.



"REX"

CURTAIN FASTENERS

The "King" of Curtain Fasteners.

POSITIVE AND SURE.

The price is right, too.

PRICE LIST.

No. 1—Single, Flat Base.....$0.75 per doz.
No. 2—Double, Flat Base..... .90 per doz.
No. 3—Triple, Flat Base..... 1.10 per doz.

Prices **do not** include screws. Also made with ⅜-in. concave base, to fit over molding.

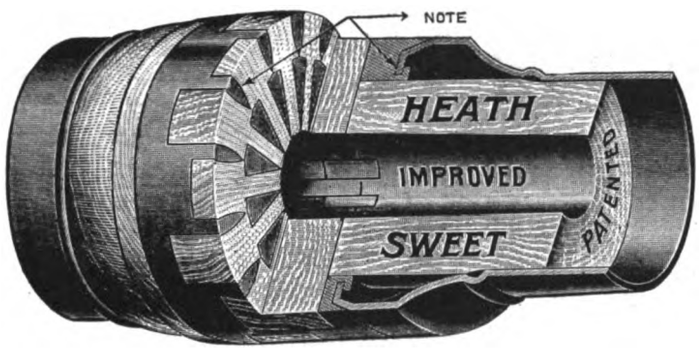
Discount quoted on application.

Our line of Curtain Fasteners is most complete. All styles—all prices.

Our roof shelters the most complete and comprehensive line of Carriage and Auto Hardware Trimmings and Fittings in America. With a new and perfectly equipped factory we are ready to take care of your orders with despatch, be they great or small.

Digitized by Google

SOMETHING NEW



NOTE POSITIVE POINTS.

1—Same Spoke Lock as Original Sweet.
2—No Wooden Cap on either end to Split or become Loose in any way.
3—Solid Wood from Back to Front.
4—Center and Front Bands joined with a Perfect Internal Lock, making a Solid Band from Rear of Spoke to Out End of Point.
5—Is as Light as the Sweet or Wood Hub with Bands of the Same Size.
6—The Style which the Best Carriage Builders in the Country are Using.

In Ordering Specify **HEATH HUB**

MANUFACTURED BY THE

Shortsville Wheel Company

Shortsville, N. Y.

MEET US AT THE C. B. N. A. CONVENTION

C.H.A.T.

Helps Secure Situations.

Carriage, Harness and Accessory Traveling Salesmen's Association

OF THE UNITED STATES.

All Commercial Travelers in Above Lines Eligible. No Others. Pays Death Benefits.

Membership Fee, - - - $3.00
Annual Dues, - - - - 1.00

Employers of Traveling Men eligible to join as associate members on payment of $5.00, and are exempt from all further dues.

Manufacturers of carriages, harness or goods that enter into their construction, jobbers of same, can secure good, reliable and efficient salesmen through our Association, as the members of this Association have the best facilities for knowing all about men who are seeking situations, and none will be recommended unless they are first class and worthy of support.

Salesmen in need of a situation, or manufacturers in need of a salesman, address for further information,

L. H. KRONFELD, Secretary.

Box 57, Mount Vernon, N. Y.

Combination Vehicles

The combination with us refers exclusively to our patented body constructions.

Whether it is a horse drawn or motor vehicle, we have bodies designed for the man who cannot support several styles of carriages or automobiles. Our combinations of both horse drawn and motor vehicles make as high as five different types of vehicles in one.

Write for illustrations and all particulars

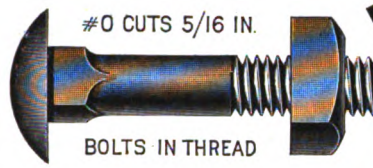
C. H. Stratton Carriage Co.

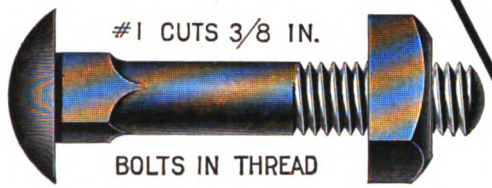
Muncie, Ind.

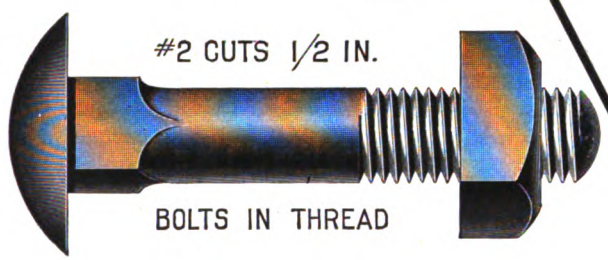
Please mention "The Hub" when you write.

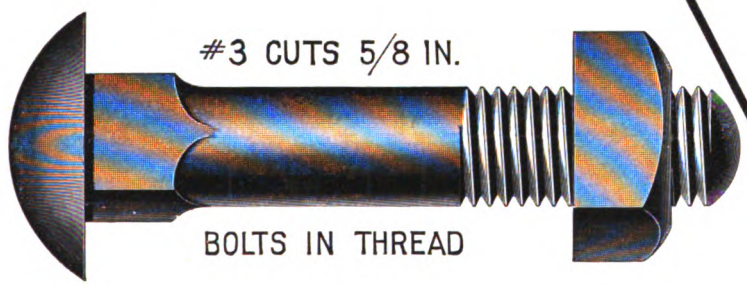
Digitized by Google

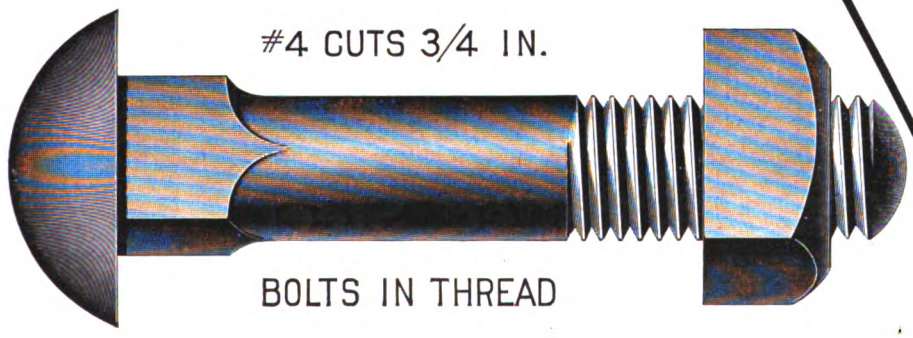
PORTER'S BOLT CLIPPERS

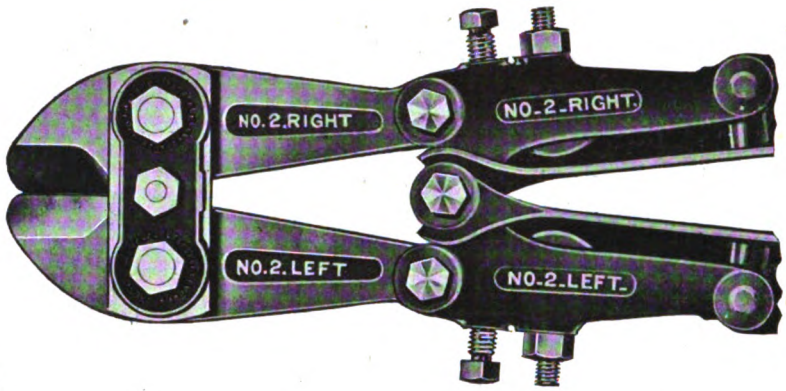












"NEW EASY"

The World's Standard

Nos. 0, 1, 2 and 3

"EASY"

The Old Favorite

Nos. 1 and 2 Only

Allen-Randall

Five Sizes

Nos. 0, 1, 2, 3, and 4

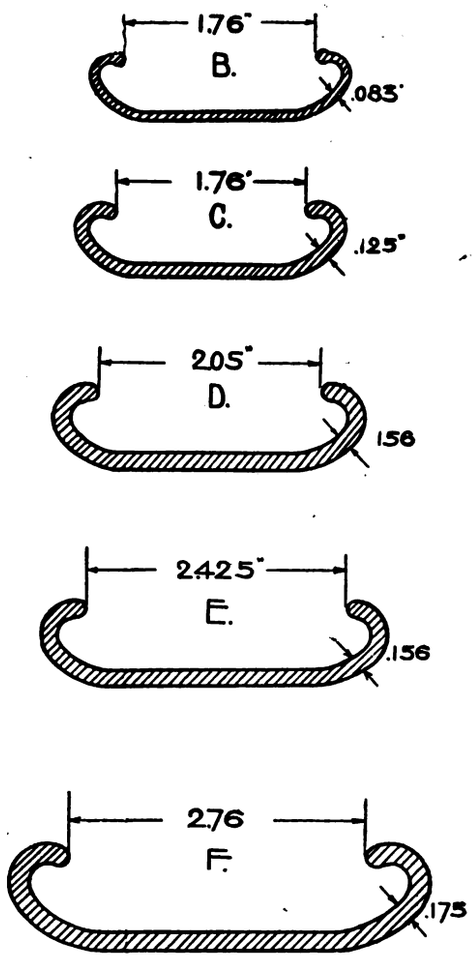
H. K. PORTER
BOLT CLIPPER SPECIALIST

FACTORY & OFFICE, 6 ASHLAND ST., EVERETT, MASS., U.S.A.

Digitized by Google

"Swedoh" Spring Steel Rims

RIMS FOR WOOD WHEELS
Inspected and Approved by the Clincher Automobile Tire Manufacturers' Association.



CLINCHER RIM MEASUREMENTS.

Size.	Rim Section.	Inside Diameter of Rims for Wood Wheels.	Diameter of Rims at Tire Seat for Both Wood and Wire Wheels.
26x2½ in.	B.	20.834 in.	21 in.
*28x2½ " interchangeable	"	21.834 "	*22 " interchangeable
*30x2½ " "	"	23.834 "	*24 " "
32x2½ "	"	26.834 "	27 "
34x2½ "	"	28.834 "	29 "
36x2½ "	"	30.834 "	31 "
26x3 "	"	19.834 "	20 "
*28x3 " interchangeable	"	21.834 "	*22 " interchangeable
*30x3 " "	"	23.834 "	*24 " "
32x3 "	"	25.834 "	26 "
34x3 "	"	27.834 "	28 "
36x3 "	"	29.834 "	30 "
26x2½ "	C.	20¾ in.	21 "
*28x2½ " interchangeable	"	21¾ "	*22 " interchangeable
*30x2½ " "	"	23¾ "	*24 " "
32x2½ "	"	26¾ "	27 "
34x2½ "	"	28¾ "	29 "
36x2½ "	"	30¾ "	31 "
26x3 "	"	19¾ "	20 "
*28x3 " interchangeable	"	21¾ "	*22 " interchangeable
*30x3 " "	"	23¾ "	*24 " "
32x3 "	"	25¾ "	26 "
34x3 "	"	27¾ "	28 "
36x3 "	"	29¾ "	30 "
28x3½ "	D.	20 11-16 in.	21 "
30x3½ "	"	22 11-16 "	23 "
32x3½ "	"	24 11-16 "	25 "
34x3½ "	"	26 11-16 "	27 "
36x3½ "	"	28 11-16 "	29 "
28x4 "	E.	19 11-16 "	20 "
30x4 "	"	21 11-16 "	22 "
32x4 "	"	23 11-16 "	24 "
34x4 "	"	25 11-16 "	26 "
36x4 "	"	27 11-16 "	28 "
28x4½ "	F.	18 21-32 "	19 "
30x4½ "	"	20 21-32 "	21 "
32x4½ "	"	22 21-32 "	23 "
34x4½ "	"	24 21-32 "	25 "
36x4½ "	"	26 21-32 "	27 "
28x120m-m & 5 in.	"	17 21-32 "	18 "
30x120 " & 5 "	"	19 21-32 "	20 "
32x120 " & 5 "	"	21 21-32 "	22 "
34x120 " & 5 "	"	23 21-32 "	24 "
36x120 " & 5 "	"	25 21-32 "	26 "
40x120 " & 5 "	"	29 21-32 "	30 "
		Circumference at Tire Seat.	
750m-mx 85m-m	D.	69 5-16 in.	
800 " x 85 "	"	76 1-32 "	
760 " x 90 "	"	70 3-16 "	
810 " x 90 "	"	76 in.	
870 " x 90 "	"	83¾ in.	
910 " x 99 "	"	88½ "	
1010 " x 90 "	"	101⅜ "	
820 " x120 "	F.	70 "	
850 " x120 "	"	74¼ "	
920 " x120 "	"	82¾ "	
1020 " x120 "	"	94 15-16 in.	

* Note that the 28x2½ and 30x2¼ tires are made interchangeable with the 28x3 and 30x3 tires. m Millimetres.

While **CLINCHER** and **CRESCENT STEEL RIMS** are a specialty with us, our greatest department is devoted to the production of

Hot and Cold Rolled Steel

for all classes of stamping and drawing purposes

Our Open Hearth Process Steel

should interest all forging houses for die work

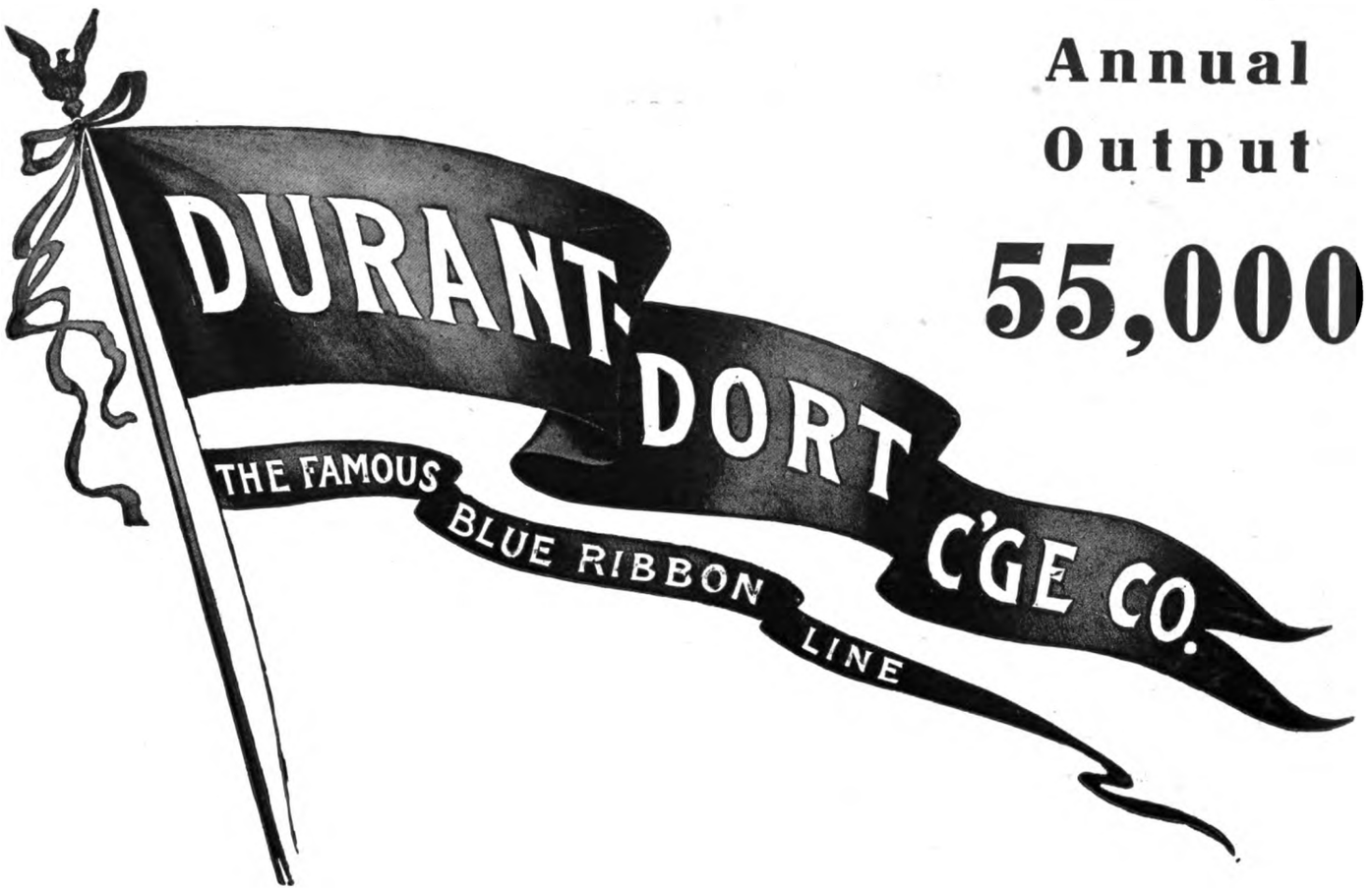
The best **OILERS** are the kind that last. Our line of **Copperized Steel Oilers** outwear anything ever made. **Automobile Oil and Gasoline Cans a Specialty.** Correspondence solicited.

AMERICAN TUBE & STAMPING CO.

N. Y. Office, 100 Broadway **BRIDGEPORT, CONNECTICUT**

Please mention "The Hub" when you write.

Digitized by Google



Annual Output

55,000

Buggies

Surreys

Spring Wagons

Delivery Wagons

Stanhopes

Carts

Driving Wagons

Bikes

Eight Plants

Flint, Michigan

Digitized by Google

No. 502 Rail With Handles, Welded Solid

JAPANNED

No. 602, Same, NICKEL

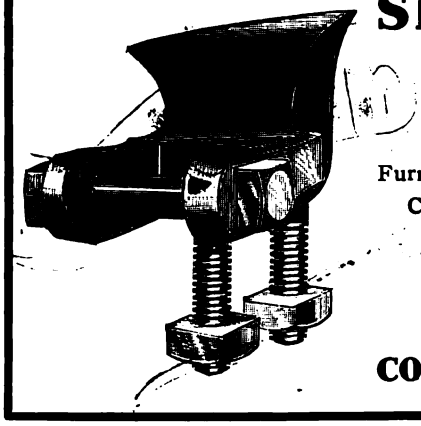
Nickel Plating Over Copper Will Not Rust, Japan Baked On With 500° Heat

McKinnon Dash Company

Cincinnati, Ohio
Troy, Ohio

Buffalo N. Y.

St. Catharines
Ontario



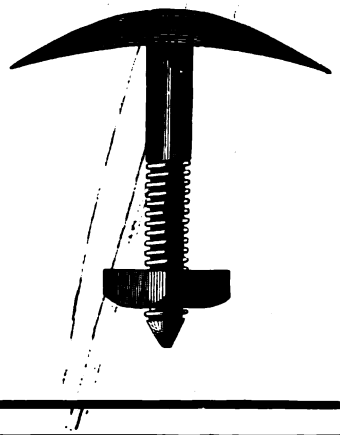
Skewed Shaft Couplings

Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips ⅝ or ¾ width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

1908 Catalog "H" on application.

COLUMBUS BOLT WORKS, Columbus, O.



Kokomo Solid Rubber Tires

¶ In rubber substance the Kokomo Solid Rubber Vehicle Tire is truly **SOLID.**

¶ Solid with the pure stock that has made them an exception to the ordinary tires of commerce.

¶ In Kokomo quality there is an established standard that is recognized as the highest ideal of tire construction. The Kokomo is a standard tire in every respect.

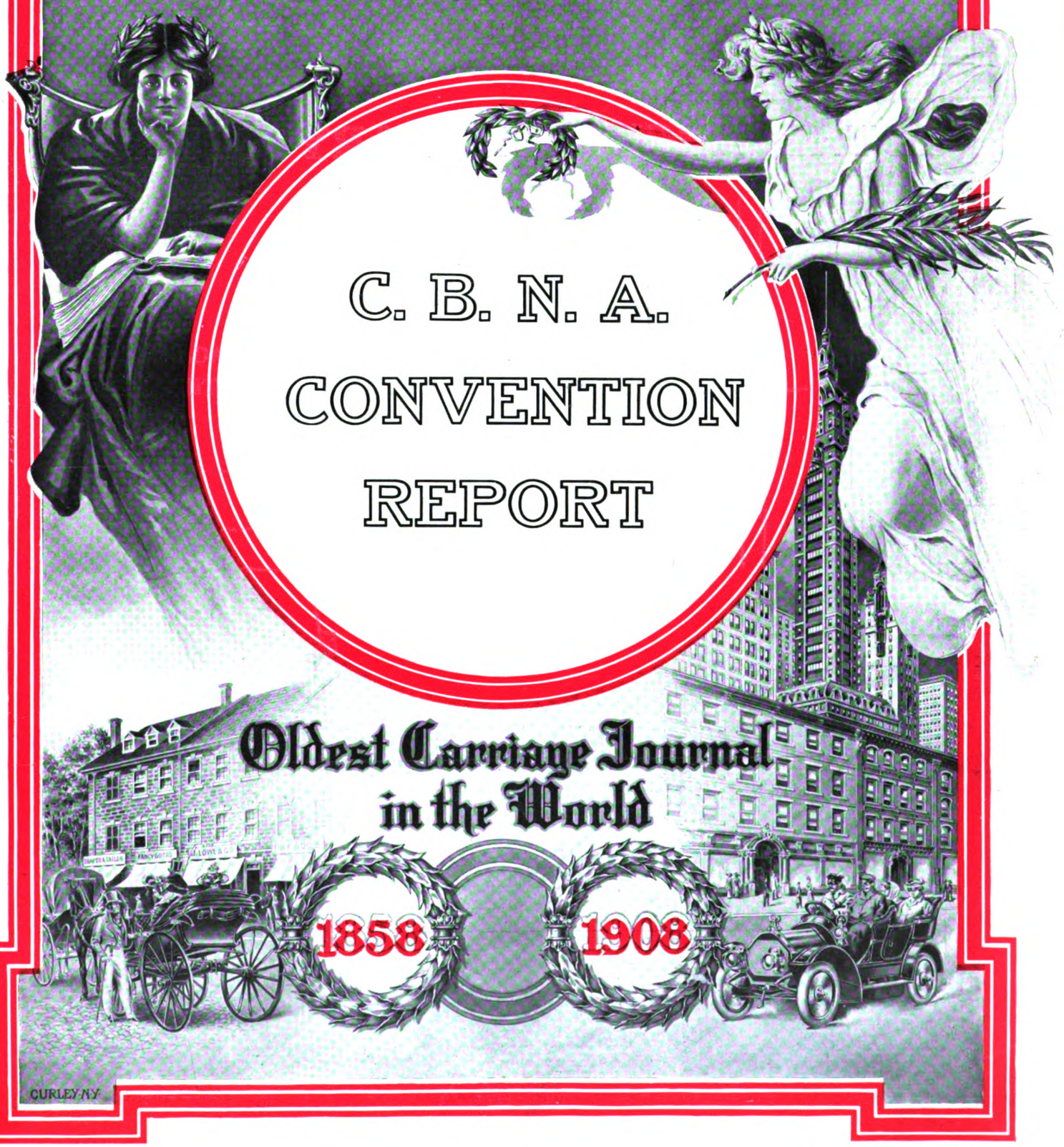
¶ Kokomo Tires always score in the running, and the longer the test the more convincing the results.

Kokomo Rubber Company

Kokomo, Indiana, U. S. A.

Digitized by Google

The Hub



C. B. N. A. CONVENTION REPORT

Oldest Carriage Journal in the World

1858 1908

CURLEY, NY

Vol. L. No. 8 NOVEMBER, 1908

Digitized by Google

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

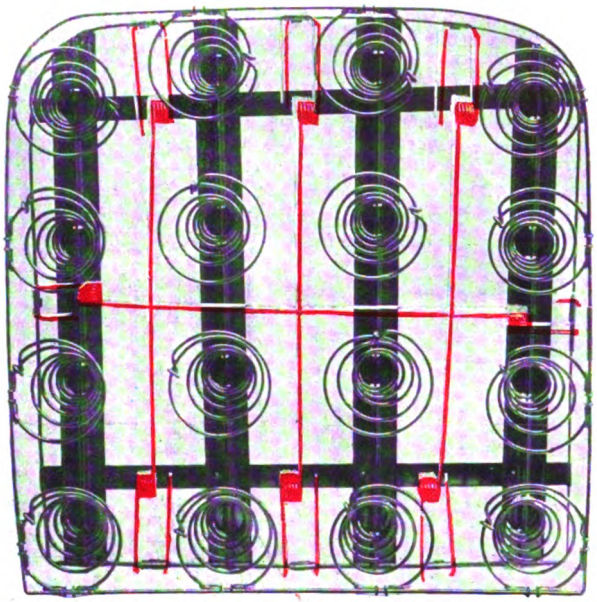
SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

ROYAL ARCH AUXILIARY SPRINGS



Soft Face Construction. Patented.

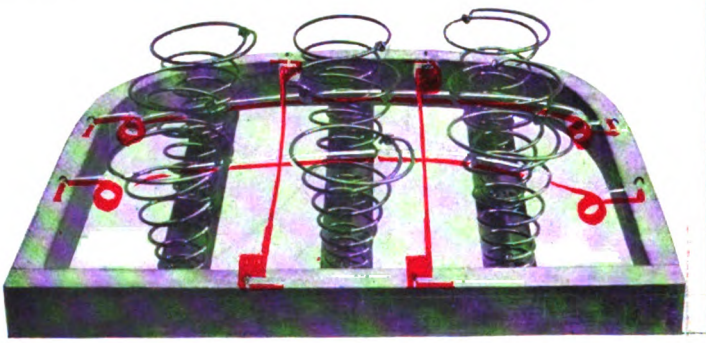
Auxiliary Spring & Ventilating Button Co.

DETROIT, MICH.

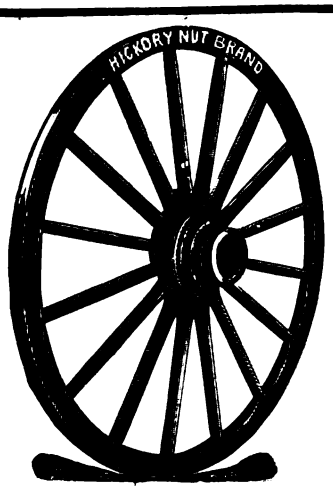
ROYAL ARCH AUXILIARY SPRINGS prevent the complete depression of the coiled springs, relieve the coils of the severe shocks, and greatly lengthen the life of the cushion. A cushion with Royal Arch Springs will never sag, and

FORTIFIES THE RIDER AGAINST THAT SUDDEN UNEXPECTED JAR

Will cost no more than the common construction. Why? Write us.



Wood Frame Construction. Patented.



CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google



The renown of Harland's English Varnish has been heralded to every part of the world, and its sterling merit recognized by all vehicle builders who desire strictly high-grade varnish. Quality is our slogan, and it is our unsurpassed quality which has given our varnishes a universally pre-eminent position and made them the standard with which all others are compared.

For the Best Wearing, Lasting and Most Beautiful Finish, Use

HARLAND'S ENGLISH VARNISH

It's the cheapest in the end.

WM. HARLAND & SON

FACTORIES:
Merton, London S. W., England

AMERICAN HEADQUARTERS:
168 Center St., New York
General Manager for United States and Canada, H. HAGGER

WESTERN MANAGER: C. W. SCHOOLEY
40 Dearborn St., Chicago

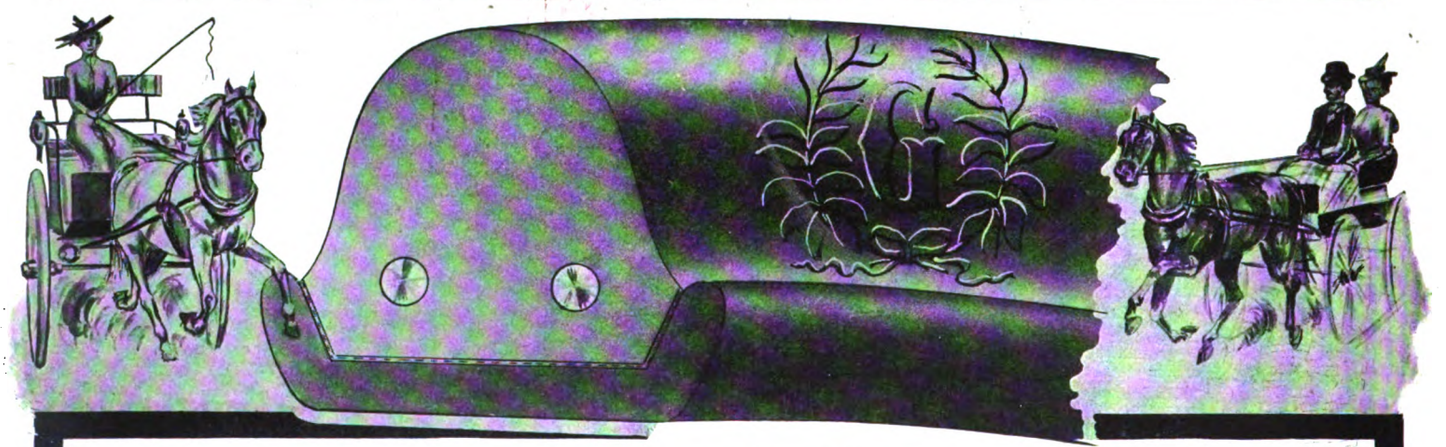
Digitized by Google

JOHN W. MASURY & SON

MANUFACTURERS OF

Superfine Coach Colors and Varnishes

NEW YORK——AND——CHICAGO



A blind man with a well developed sense of touch can pick the best solid rubber tire

The mark of identification is the one solid rubber tire trade-mark that has been in evidence and in favor with the wide-awake, far-seeing, profit-seeking carriage man for 15 years or over. On all

GOODRICH SOLID RUBBER TIRES

BRANCHES IN
CHICAGO
PHILADELPHIA
DETROIT
CLEVELAND
ST. LOUIS
DENVER
LONDON
PARIS

THE B. F. GOODRICH CO., Akron, Ohio

FRANK W. TUCKER, 33 Haveril Street, Boston, New England Agent

Our Prdoucts are also handled in
NEW YORK
BUFFALO, by
THE B. F. GOODRICH CO., of New York
and in SAN FRANCISCO
LOS ANGELES
SEATTLE

Digitized by Google

Surest!

Consider the varnish makers of the world.

Compare growth in investments, present extent of facilities for economical buying, and equipment for diversified manufacturing.

There must be one which leads the rest—which is, in fact as well as name, "the **greatest** varnish manufacturer."

Then consider a little further!

Isn't it true that that one which, starting small has grown to be the greatest, must necessarily have done so through "hitting the nail on the head" the largest number of times?

And hasn't experience fully demonstrated that hitting the nail is not a matter of luck, but of science and system—that the concern which **has** done it oftenest, **will** do it oftenest?

And finally, aren't **you** looking for the varnish maker who will do just that—"hit the nail on the head the largest number of times?"

Standard Varnish Works

Largest in the world and first to establish definite standards of quality

New York
29 Broadway

Chicago
2620 Armour Ave.

Toronto
International Varnish Co., Ltd.

London
27 Bevis Marks

Berlin
41 Ritterstrasse

Brussels
41 Rue De La Bienfaisance

Please mention "The Hub" when you write.

Digitized by Google

OUR NEW COLOR LINE

Coach, and especially automobile body painting, is making new demands on the skill of the painter. To meet these requirements we have added to our line

OLYMPIC RED —Darker than Coachpainters' Red, richer in color, and **more permanent** than anything we have made like it. The **body** is much **denser** than Coachpainters' Red.

BATH RED —A light red of excellent body and color.

MARATHON GRAY, MOSS GRAY—These are **entirely new shades,** made with a new base. Their adaptability to automobile body painting will be found most satisfactory.

THISTLE GREEN—A high grade color of great brilliancy and covering power. **Absolute permanency** as compared with all other standards.

INDIAN BLUE—**An original shade** combining great brilliancy and covering capacity.

We recommend a test of these new tones, feeling sure painters will find them valuable additions to
VALENTINE COLORS
they are now using.

VALENTINE & COMPANY

New York Chicago Boston Toronto Paris Amsterdam



Please mention "The Hub" when you write.

Digitized by Google

C. A. WILLEY COMPANY

Color Grinders

AND MANUFACTURERS OF

SPECIALTIES IN CARRIAGE and CAR PAINTS, COLORS, Etc.

WILLEY'S SUPERFINE SPECIALTIES COACH COLORS TRADE MARK

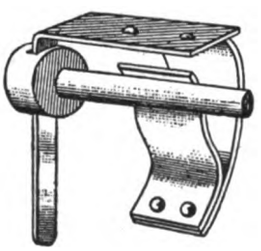
92d St. Cars at Hunter's Point Ferry Pass our Factory.

Hunter's Point, New York City

CALL AND SEE US WHEN IN NEW YORK.

SPEEDY SHAFT COUPLER CO.

——Manufacturers of——

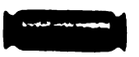


The Quickest, Neatest and Most Durable Coupler on the Market

We make the bolt in two sizes, 3-8 for single and 7-16 for double. The spring is made right and left so you can put in the bolt without taking off the wheel.

LANGWORTHY, :: :: :: :: IOWA

BRAZING SLEEVES



For Putting on Rubber Tires.
No Filing or Scarfing.



LINED UNLINED

H. F. WHITE, 111 E. Pearl St., Cincinnati, O.

"Not how cheap, but how good."

Beckwith-Chandler Company

Manufacturers of High-Grade

COACH AND RAILWAY VARNISHES

NEWARK, N. J. 201 EMMETT STREET

NEW YORK 320 FIFTH AVENUE

"100 per cent. quality in every can."

WING RUBBER CARRIAGE TIRES



are made from tough, durable, lively New Rubber. QUALITY is the first consideration. Our "Wing" Tire will outwear several ordinary rubber tires. The wings (see cut) keep water, sand and grit from working between the channel and the tire, to wear out the tire from underneath. Write for particulars.

GOODYEAR AKRON, OHIO TRADE MARK.

The Goodyear Tire & Rubber Co.
Carriage Tire Dept.
Akron, Ohio

BRANCHES: Boston, New York, Buffalo, Chicago, Cincinnati, Detroit, St. Louis, Denver, Los Angeles, San Francisco.

81 Years' Experience in Every Can

E.S. 1827 &CO.

Edward Smith & Co.

Rough Stuff and Colors

The highest quality made

New York
45 BROADWAY

Chicago
3532 SOUTH MORGAN ST.

Please mention "The Hub" when you write.

Digitized by Google



O STANDS FOR OPPORTUNITY just as the name Kelly-Springfield stands for quality in rubber tires.

The opportunity is the opportunity of every carriage dealer who reads this ad to make every carriage that leaves his repository an advertisement of his good methods of doing business because it bears Kelly-Springfield Tires, instead of taking a chance on another tire not so good, not so well known, and having his customer judge his entire establishment by that particular tire.

A word to the wise builder is sufficient for Kelly-Springfield Tires.

CONSOLIDATED RUBBER TIRE COMPANY
20 Vesey Street, New York, and Akron, Ohio

BRANCH OFFICES:

NEW YORK
243-245 West 47th Street
PHILADELPHIA
315 North Broad Street
CINCINNATI, OHIO
641 Main Street

BOSTON, MASS.
11-13 Hawkins Street
ST. LOUIS
2340 Olive Street
SAN FRANCISCO, CAL.
507 Howard Street

CHICAGO
435 Wabash Avenue
DETROIT, MICH.
294 Jefferson Avenue
AKRON, OHIO
Cook and Kelly Aves.

Please mention "The Hub" when you write.

Digitized by Google

Automobile Door Locks

In Buffalo, four years ago, a little boy was bumped out of a moving automobile. The "weave" of the machine was so great that the lock-bolt slipped out.

The manufacturer demanded a Safety Lock. We made it—the Original Safety Hook Lock—our No. 995. The following year we improved it, making it almost entirely automatic. It is all steel and drop-forgings, and the number is Nine-Ninety-Nine.

It is to-day the *Standard Door Lock in the automobile trade and is used by over 50 per cent. of the American manufacturers.

If you are not acquainted with our No. 999 Door Lock, your request for a sample pair on memorandum will be honored by return express.

You will have added much to your lock knowledge and we will be—well—we will be pleased to have had you look it over, anyway.

The English & Mersick Co.

New Haven, Conn.

P. S.—Don't forget the number—Nine-Ninety-Nine.

*Standard—Any established measure; a type, a model, or example for comparison.—*Standard Dictionary.*

EXCEPTIONAL BARGAIN.

FOR SALE

Wheel Making Machinery

Manufactured by

The Defiance Machine Works

Defiance, Ohio

MAJORITY BRAND NEW MACHINES.

One improved double equalizing machine with two saws, 20-in. diameter, belt and counter
One improved wheel boring and screwing machine.
One patent double drum felloe polishing machine with counter.
One improved hub polishing machine.
One double automatic tread sanding machine with counter.
One improved adjustable arm belt polishing machine.
One heavy sarven wheel riveting stand.

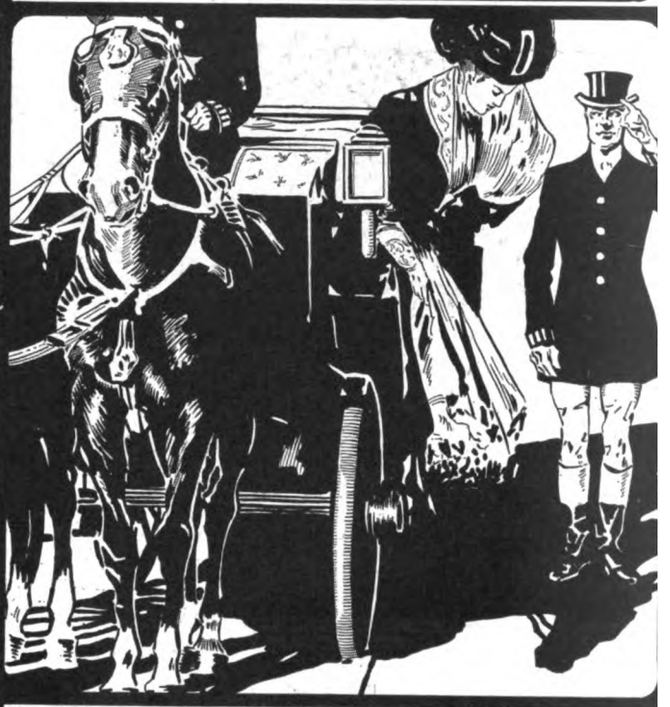
Machines erected in New York City.

Apply to

The G-L Economizer Company

1412 Times Bldg., New York

STEIN DOUBLE CUSHION TIRE





Perfection

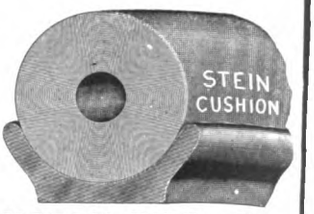
in a rubber tire is not to be judged by its shape or manner of application, but by its rubber properties and wearing qualities.

STEIN DOUBLE CUSHION TIRES

ARE LONG ON RUBBER AND WEAR.

Don't take our word for it. Your own practical experience has acquainted you with a knowledge of rubber tires.

Apply a set of **Stein Double Cushion Tires,** and when they have proved their superior qualities, which they will, you will be enlisted as one of our regular patrons. For wear and tear, they are always there.



STEIN DOUBLE CUSHION TIRE CO.

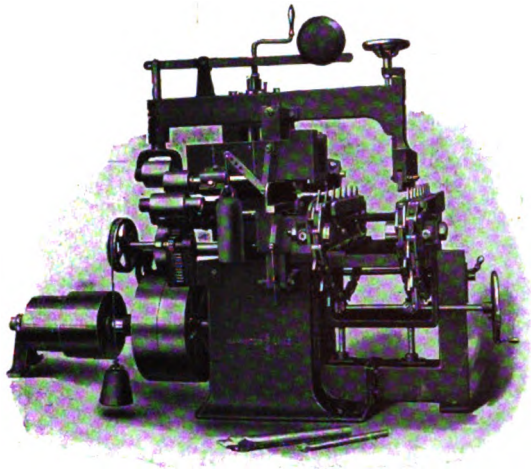
Akron Ohio

Digitized by Google

HAMILTON-OHIO-LINE WOOD WORKING TOOLS

For Automobile Body and Wheel Work.

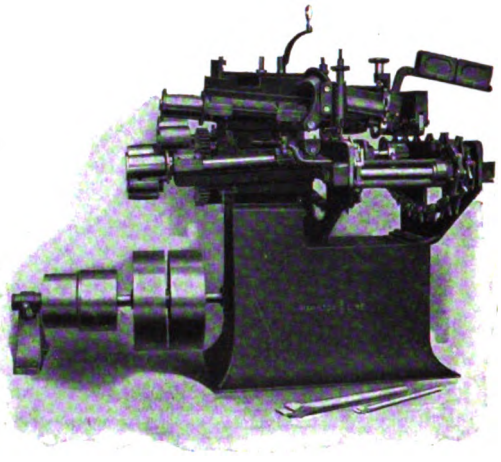
Carriage, Wagon, Hub, Spoke, Rim and Wheel Factories



Hamilton Spoke Tenoning and Mitering Machine No. 398



Hamilton Dowel Borer No. 315.



Hamilton Automatic Spoke Throating Machine No. 399

Disk Sanders, Belt Sanders, Spoke Sanders, Wheel Sanders, Gear Shapers, Scroll Eyeing Machines, Gear Rounders, Spring-Bar Boring Machines, Seat-Back Benders, Rim Planers, Rim Rounders, Rim Borers, Rim Cut-Off Machines, Wheel Boring & Screw Driving Machines, Spoke Lathes, Spoke Cut-Off Saws, Spoke Tenoning and Mitering Machines, Spoke Throaters, Spoke Facers, Wheel Facers, Wheel Tenoners, Hub Lathes, Hub Mortisers, Hub Borers, Wheel Boxers, Wheel Presses, Tire Truers, Tire Bolters, Spoke Cut-off Machines, Band Saws, Rip and Cross-cut Saws, Planers, Matchers, Moulders, Shapers, Boring Machines, Universal Wood Workers, etc., etc., etc.

THE BENTEL & MARGEDANT CO., Hamilton, Ohio, U. S. A.

The Geo. R. Carter Co.

Manufacturers of

Leather Specialties for Carriages and Automobiles

Also all kinds of

Shaft, Pole and Automobile Straps.

CARRIAGE LEATHER EITHER IN THE HIDE OR CUT TO PATTERN

Our prices are reasonable, our service prompt

Connersville, Indiana

INDEPENDENT OF ALL COMBINATIONS

The Eagle White Lead Company's

"EAGLE" BRAND OF "OLD DUTCH PROCESS" WHITE LEAD

ALSO "EAGLE" RED LEAD, LITHARGE AND ORANGE MINERAL

Our **Special Coach and Carriage White Lead** is the best white lead on the market for this class of work.

We claim for our **"Eagle" Red Lead** that, for Durability, Color, Texture, Covering and Spreading Properties, it is not excelled by any red lead in the world. It requires more pure linseed oil to the hundred pounds, and when properly mixed it will not settle. It is the best foundation coating for vehicles known.

New York—54 Maiden Lane
H. C. Russell, *Manager*
Philadelphia—1901 Callowhill St.
Baltimore—447 North St.
Geo. O. Shivers, *Manager*
Buffalo—Builders' Exchange
A. S. Goltz, *Manager*
Pittsburg—
Pittsburg Paint Supply Co., *Agts.*
Cleveland—
The Hale & Holmes Co., *Agents*
Chicago—125-127 N. Peoria St.
E. B. Bennett, *Manager*
St. Louis—405a Benoist Bldg.
B. P. Temmeyer, *Manager*
Kansas City—
W. R. McDonald, *Agent*
New Orleans—
Jno. R. Todd & Bro., *Agents*
Dallas—Jack H. Frost,
Agent for State of Texas

Eagle White Lead Co., Cincinnati, Ohio

Digitized by Google

The Hub

Copyright, 1908, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. L. NEW YORK, NOVEMBER, 1908. No. 8.

C. B. N. A. Convention Report

At the Thirty-sixth Annual Meeting, Which Was Held in Chicago, October 13 to 15, John Hassett, of Amesbury, Mass., was Elected President, and Washington, D. C., was Selected for Next Meet

The thirty-sixth annual convention of the Carriage Builders' National Association was called to order in the First Regiment Armory, Chicago, at 10:30 a. m., Tuesday, October 13, 1908, by President J. D. Dort, of Flint, Mich., who presided throughout the sessions. Henry C. McLear, secretary and treasurer, was present. President Dort opened the meeting by introducing Mr. Emil C. Wetten, special corporation counsel, who addressed the convention as follows:

Address of Welcome by Emil C. Wetten.

Mr. Wetten: Ladies and gentlemen, on behalf of his honor, the mayor, I desire to express his sincere regret for his inability to be here on this occasion.

Chicago is always glad to welcome visitors to its city. We feel particularly honored this morning in that you have selected this city to hold your thirty-sixth annual convention. * * *

I am glad to assure you this morning that we have not been unmindful of the interest of carriage manufacturers. During the past year we have passed what is called the wheel tax law. Under this law we exact a stipulated fee from the owner of every wheel vehicle that is upon the streets and alleys of the city of Chicago. And I know you will be glad to know that it has been willingly paid by the operators of wheel vehicles. We have done this, not only because we wanted good streets in Chicago, but with good streets combined with your ability to manufacture the best carriages in the world, you soon will be able to put forth the product that will last for a lifetime; you will be able to get more money out of it and be able to soon retire from business with a consciousness that you have performed a duty to the community at large. (Applause.) * * *

Now the mayor never gives the keys of the city to the guests of local manufacturers, because we have learned by experience that the local manufacturers have keys to more front doors and back doors than has ever been corralled by the city of Chicago.

We bespeak for you a pleasant and profitable convention, and if you do not have a pleasant time it will be because you do not follow the lead of the local committee.

On behalf of the association, Mr. Maurice Connelly, of Dubuque, Iowa, responded as follows:

Response by Mr. Connelly.

Mr. President, Ladies and Members of the C. B. N. A.: It is an honor, though hardly a pleasure to you, that I should respond to the kindly greeting of the representative of this gigantic city.

My experience in speaking is rather limited, and has thus far been confined to after-dinner speaking, and as it is a long time since I had my dinner, you will have to overlook my shortcomings. * * *

I hardly feel entitled to a place upon this stage because my experience in the carriage business dates back but a very few years, and when I should have been Russell Gardnerizing our business I was trying to absorb the lore and learning of European universities, and while it is not a profitable basis, I claim precedence over any other member of the craft when it comes to the most inappropriate and helpless preparation for my present occupation, and I challenge all comers in point of hopeless ignorance of conditions of the craft upon my entrance and in the backwardness of my progress since embarking in the same. However, my forebearer was not entirely unknown to the C. B. N. A., as for over a half a century the House of Connelly has withstood the stress of panics, disastrous fires, and the siren voice of the cheaper builders with its silvery jingle of larger profits. * * *

In point of patriotism and breadth of view the Carriage Builders' National Association yields to no organization in its galaxy of splendid figures, such as the Brewsters, the Kimballs, the Cunninghams, the Hookers, and countless others of their calibre,



John Hassett, of Amesbury, Mass.
President-Elect of C. B. N. A.

and when the appointed historian shall emblazon the pages of this association in point of supremacy of product, personal culture, princely good fellowship, Chicago with her genial Fred Kimball leads all the rest.

This association meets annually to compare losses and to prepare plans for its future work that its fellows may roll in ease and luxury past the grimy factories and plethoric repositories of that poor country cousin of the rich. Our association is the longest in point of establishment and possibly the shortest in point of profit. We move primates, potentates and plebians and perhaps even bankers with our product, but sometimes fail to move the latter with our pleas.

Digitized by Google

In regard to our militant brother, the automobile, we are advocates of peace and adhere to the old adage, "live and let live," while our rampant relative goes hurtling down the blood-stained boulevards to the land flowing with milk and honey on high gear and low gear, and we are having a little endurance test of our own, principally on the reverse gear. Some of us think that the automobile has come to stay. Others who pay attention to the newspaper headlines think it has come to slay. At any rate, it has a support of some of our most illustrious surgeons and is looked upon with beaming favor by all of our up-to-date undertakers. Nevertheless, we must go along with it as best we can for this week at least in the city of Chicago. We will eat, drink and be merry, because to-morrow we may have a riot in one of these blamed things ourselves. * * *

The president then introduced P. R. Doherty, of Flint, Mich., who he said would respond to the address of welcome in behalf of the association. The C. B. N. A., he said, was prominent enough to warrant a double response to the city's welcome. Mr. Doherty's address follows:

P. R. Doherty's Address.

Mr. President and Members of the Association: The honor of responding to an address of welcome like you have just heard is a very high one, and is deeply appreciated. We are indeed grateful for the kind words of welcome and glad that Chicago was chosen as the meeting place for our convention this year. It shows we are broadening out, that it is not necessary to look to New York as the ideal convention city. Our country is a big one, and the nearer we get to the center of her population and her industries the better it is for us to hold the convention at that place, and here we are in the Windy City, one of the busiest centers.

We are thankful we are here, and in a country that has already passed its first century of constitutional government. There are no clouds overhead, and no convulsions under our feet. We reverently return thanks to the Almighty for the benefits of the past and with confident and hopeful promise march upon sure ground toward the future.

Our institutions, besides being the first along educational lines, also furnish full equipment of shield and spear for the battles of freedom, and for the battles of principle, and we can safely say of our C. B. N. A. organizatiion what Fiske, the great historian, said of this country: "It is the grandest in the world, it is the most wisely conservative, the most steadily progressive and the most likely to endure."

President Dort: Now, ladies and gentlemen, I have the pleasure of introducing a gentleman who has made a great study and who has sacrificed a great deal in the interest of the waterways of the country. It is a subject that is a live issue before us, and we are very glad to have here to-day so talented and so efficient and so hard-working a representative in this cause. I take pleasure in introducing Honorable Martin B. Madden, of Chicago, who will now address us upon the "Improvement of the Waterways of the Country."

Address by Mr. Madden.

Mr. Chairman, Ladies and Gentlemen: I am afraid that after you have listened to polished orations and to this flattering introduction by the chairman of the meeting you will be seriously disappointed in what I may have to say.

For ages back the people of the civilized nations of the world have been dreaming about the great importance to navigation that would ensue when the Atlantic and the Pacific oceans were connected. Efforts have been made by some of the most distinguished engineers in the world to dig the Panama Canal, and the French, although they expended 250 million dollars in an attempt to connect these two oceans, finally failed. * * *

This government has been on the Isthmus now in active operation about three years—a little more. Previous to the beginning of active operations we expended a large amount of money to fix the conditions from a healthy standpoint so Americans could live there and work, and the sanitary condition of the Isthmus of Panama to-day is equal to the sanitary condition of any American city, thanks to Colonel Gorges, who has charge of the sanitary arrangements. I was there last October ten days, investigating the conditions. I found during all of that period that the men are better housed, better fed, better entertained, that the children have better schools, and that comforts are given to the men who work on the canal that are unknown to men working in similar places in the United States. We furnish free houses, fuel, water and light. We furnish free schools and free churches; free gymnasiums, free clubs, free halls, free opportunities to do everything that an American citizen ought to have the right to do. The men are better satisfied working for Uncle Sam on the Isthmus of Panama than men are in any other line of endeavor that I ever knew. We have 6,000 Americans that are doing the mechanical work in connection with the construction of the canal. We have 36,000 men employed there all told. Most of these are Jamaica negroes, Spaniards, and Montanigrans and so on. We are excavating at the rate of 3,200,000 cubic yards of material a month. At the rate we are going we will complete the canal in three years from next January, and four years from now, at the very outside, the Panama canal will be opened to the navigation of the world. (Applause.) * * *

I have undertaken to describe the canal for the purpose of saying just this—that we are building this canal and expending this two hundred and fifty millions of dollars more as a matter of sentiment for the accommodation of the commerce of the world than we are for the development of the commerce of America.

Now after we have spent this two hundred and fifty millions of dollars for this world-wide benefit we would be unfair to ourselves and untrue to our duty if we failed to develop the interior waterways of our own continent; and so a great many men in public life have endeavored to devote themselves to the question of the development of interior waterways; and let me tell you what four of us did three years ago this month. We purchased a little gasoline launch; it was only 26 feet long, but it had no covering of any kind, and we started from the life saving station at the north pier down through the Chicago river, down through the Illinois and Michigan canal to the Illinois river, and to the Mississippi river from Chicago to New Orleans, and on our way we stopped in every town and organized in all of these towns a deep waterways association, and we organized a central association in St. Louis; and these associations sent delegates to the convention that was held in St. Louis after that. Eleven hundred delegates attended, consisting of members of Congress of both branches, governors, business men, and men from all the walks of life attended this convention. It was then supposed to be the greatest convention that was ever held on the subject of the development of interior waterways. The sentiment created by this organization of these people along the Mississippi Valley was finally extended to other sections of the Union, and a year ago a convention was held in Memphis, Tennessee. Theodore Roosevelt saw that this was one of the things that ought to be done—this development of interior waterways—and he came to the convention and advocated the adoption of the plan as a permanent policy of the government. He made a great speech. He did the subject a great deal of good, and that was followed up by still further missionary work on the floor of the House of Representatives. Personally, I went to the chairman of the committee on rivers and harbors after our first convention and asked a hearing from him on this question of uniform development of waterways, and he said it was absurd.

A few moments afterwards I brought 75 members of the House of Representatives to his room, and convinced him that I was not the only member of Congress who favored this proposition. He yielded to us and gave us a hearing. We discussed the question on the floor of the House for a week. We secured an appropriation for the survey of a deep waterway from the Lakes-to-the-Gulf. That survey has since been made. The report is not yet in possession of Congress, but when it is I believe it will show the feasibility of the proposition. If it does the thirty States that border on the Mississippi Valley are bound by all that we owe to the future conditions of this country to insist upon the active co-operation of the members of Congress coming from those States in the movement for the construction of this great waterway. The seaboard cities all over the country with the completion of the Panama Canal will be placed in a position where they can have cheap freight rates to South America and to the Orient; and that of the Middle West—in that part of the country which raises all the food products, the surplus food products of this country that are shipped from every place at a great disadvantage, if we have not preparations made for water communication for the shipment of the products of our labor, for the time has come when in the judgment of many railroad development is going to move along slowly; it is not going to increase as it has in the beginning. The railroad facilities are already inadequate for the movement of the commodities of the country, and it seems to me to be the paramount duty of the government to furnish the facilities which will enable the movement of the bulk products of the factories, of the mines, of the mills, at the cheapest possible cost. Railroad men claim that the slow movement by water would hot be an advantage to the shipper or to the receiver of the commodity, but to illustrate: I happen to have a business located on the drainage canal about thirty miles from Chicago, and in the business we employ canal boats. These canal boats make a trip every day in and out. The freight cost is not much more than one-fifth of the rail cost of freight, and the best time we can make with a railroad car from the same paint to Chicago shipping to ourselves and unloading promptly is one trip in five days. The

Digitized by Google

president of a railroad here took issue with me upon this question and he said he thought I must be mistaken, and he produced the record of the shipment of one car, but he failed to produce the record of the full shipment of cars, and when I called his attention to the fact that it was the round trip that I had reference to, he said I was right.

Then the freight movement for heavy commodities does not need rapid transit. Here is an illustration of the difference in cost. There is a concern just starting a barge line from Pittsburg and Duluth on the Ohio river for the transportation of coal; they have a tow of barges that carries 5,000 tons of coal in charge of one tug. It takes them twenty-five days to make the trip. It costs exactly fifty cents a ton for the transportation of that coal for that distance, and the rail charges for the coal over the same distance is exactly $5.50 per ton. You men who are engaged in the manufacture of carriages need an opportunity to ship your bulk commodities at a less freight rate than now enjoyed. You have the railroads always charging what the commodity will bear. If it is diamonds, of course they want to get 90 per cent. of the diamonds; if it is coal, of course they will not expect ninety per cent., but they will carry it at a cheaper rate; if it is shoes they charge you in proportion to the value of the commodity and not in proportion to the tonnage of the commodity. You men who are in this business, it seems to me, can afford to employ some of your time to educate the people in your sections to the importance of the expenditure by the Federal government of a sufficient sum of money every year to develop the waterways of the country so that we may be able to have the railroad rates regulated.

The construction of waterways at the expense of the Federal government is the best possible section that can be written into the interstate commerce law; you cannot have it misconstrued by the supreme court if the water continues to flow; it is there for the free use of the American people.

There are thousands of miles of waterways that can be developed without any extraordinary expenditure—the lakes, the upper Mississippi river, the Illinois river, the lower Mississippi, the Columbia river, and rivers in all sections of the country. There is more to the development of the interior waterways than the mere opportunity of shipping goods at a low freight rate. The development of these waterways also develops water power of vast magnitude, and it is estimated by scientific men that with the full development of all the waterways within the confines of the American continent it would develop a sufficient amount of water power to operate all the factories that are now in this country and all that could ever be erected, so there is a remedy for the extinction of the coal product some day. Think of it. Help us in the movement.

Every mile of waterway developed attracts railroad terminals. Every railroad terminal brings freight to the waterway and carries freight from the waterway to the railroad. In this country, and particularly in this section of the country, we are in the center of the country geographically; we are in the center of the great bituminous coal fields. We are close to the iron ore beds. The development of waterways here would facilitate the movement of the products from every city bordering on the great lakes. It would enable the manufacturer of all goods made of iron to produce them at less money than has ever been the case before, because manufacturers would spring up like magic along these lines of waterways and the railroad terminals would come to the waterways to carry the raw material in and the finished product out, and the great economy of the fact is, it seems to me, to permit of an opportunity not only to manufacture goods where you can bring your raw material in without cartage and take your finished product out without cartage, but also enable you to ship them from one section of the country to the other at the least possible freight rate.

Any money expended by the American government for this purpose will have a more salutary effect on the regulation of railroad freight rates than any money that can be expended by it for any other purpose.

I am asking you now as one of the believers in the future of America, in the future development of the waterways of the country, and in the conservation of its natural resources, to go home and write to your members of Congress and tell them that it is one of their first duties to help to legislate for this, I think, the most important thing to-day before the American people. (Applause.)



President Dort then delivered his opening address, which was as follows:

Address of the President, J. D. Dort.

Gentlemen: Thirty-six years ago was launched this staunch, old ship, the "C. B. N. A." She sailed out of port a completed craft, "full rigged," with colors flying, superbly manned and officered with a goodly passenger list, all first cabin and probably not a stow-away on board. A few are here to-day who were present at that launching and who sailed out with her then, and who, in all sorts of weather, fair or foul, have sailed with her ever since. We bow to loyalty; that quality in any man always excites our admiration, and so we regard those men who have stood by the old ship; stood by her then and are standing by her now. And so we say all honor to that little band of veterans, who are to-day doing their part, whether as officers or just plain sailors, in keeping her afloat.

Wasn't she well designed, constructed of good materials, put together by master builders, and hasn't she been piloted by

Digitized by Google

men of skill, conscience and experience, to have made such a record? That for a period of thirty consecutive years, whether sailing on the top waves of business prosperity or in the trough of business depression, she has never yet failed to have annually put into port, and apparently a better craft with each succeeding year?

But let us not overlook that passenger list—the men who have largely furnished the wherewithal, the fuel for her boilers. Could we say to-day the old ship would not have been on the rocks or left powerless to buffet the waves had it not been for that large body of accessory men who have each year, at whatever price, willingly paid, not worked, their passage, with the double object, that of maintaining the strength and dignity of the craft, and of promoting a larger and wider market for their wares?

There is yet another element, that if mentioned last has not contributed least to our success, and I refer to the various vehicle trade journals, the peers of any in the great sea of trade journalism to-day. Theirs is a business; they do not embark in that sort of work purely from philanthropic motives, but show me a class of men in all that great fleet who have worked more unselfishly and more successfully in the upbuilding and upkeep of their respective craft than have the men who have cast their destinies with ours.

So much then, for the work and workers of yesterday and to-day, but what of the morrow? Though we have met and overcome the breakers which are now astern of us, we know that ahead of us there must still be others which we shall have to face and battle with, and so we have put into port to-day, not only to take account of the work and stewardship for the past year of the officers and others of our ship's company, on whom certain duties and responsibilities have been placed, but to overhaul and put in order the old craft for the voyage of the coming year.

We may as well ask ourselves, are we just a good, staunch, old sailing vessel, proud of and content with our past history, methods and achievements Are we to give way or to hold our place side by side with these new ocean greyhounds which seem to have taken the market like mad and whose advent marks a new era in the development of the world's facilities for transportation?

Gentlemen, I believe we can trim our ship to hold its own as a whole against all comers. If it has been left to the automobile to set the pace; let us not sulk, but take pace, and those of us who do not, I fear, must lose out in the race. Think of selling one hundred million dollars' worth of automobiles for spot cash. Why, I believe some of us would hardly recognize our own voice if we should summon up courage enough to propose cash terms to a customer on even a single job, much less the making of any such terms a business practice. And again, every automobile dealer is practically required to know and follow up every prospective purchaser in his territory, and those "prospects" are watched as a cat would a mouse, until they either buy or leave the country.

I might enumerate many other features in the conduct of their business, which indicates an aggressiveness on their part quite beyond that employed by the averge carriage maker or dealer in the promotion of his business. But it is not necessary to make further comparisons, for comparisons usually are odious. The object lesson, however, is right before us, and it simply teaches us that we must be quite as fully alive to our own great possibilities as they are to theirs.

Our field is an almost limitless one. Back of our present great market is that enormous reserve brought about in the fact that something like two millions are added to the country's population annually, and like compound interest, increases in a greater ratio with each succeeding year, and the ratio of increase in our purchasing power is even greater than is that in the population. And then beyond our own great market lie the markets of the world.

The horse. Well, how many of us ever give even a passing thought to the sort of horse which is to draw the vehicle we build An automobile manufacturer might as well give no heed to the engine or motor which is to propel his machine—I call your attention to this to illustrate the point, that if we expect to maintain a prestige for the horse drawn vehicle, we should interest ourselves to some extent in maintaining the prestige and supremacy of the horse as well. My friends, a good horse furnishes quite an incentive to the purchase of a good vehicle.

I shall not dwell upon the matters which your several committees have in hand, in all of which every carriage builder should take a keen interest. There are but one or two that I will specifically mention. First, that of timber supply and forest conservation. As president of your association, I had the honor of an invitation to that memorable conference on the conservation of the country's natural resources, which was held in Washington last May, and it is needless for me to speak of the interest and enthusiasm which the discussion of the various subjects awakened, not only in every one present, but in the people of the entire country as well. As a result of that conference, a national conservation commission has been named to take the initiative in the promotion of that work and it is the purpose to enlist the sympathies and to secure the co-operation of all associations whose members are more or less directly interested.

The commission's chairman, Mr. Pinchot, has requested that a conservation committee be named from this association, and I would recommend that Mr. Pinchot's request be favorably acted upon.

The question of taking out a membership in the National Hickory Association, I hope may be considered.

The good roads movement will be a live issue, and the question of federal aid in the promotion of this vitally important work will be discussed.

I desire at this time to make special mention of the intelligent, persistent and effective work of your freight committee, and notably of its chairman, Mr. Theodore Luth. The association may well congratulate itself that so highly an important matter was placed in the hands of such a conscientious and effective body of workers.

It is hoped that the sessions which are to follow may be record breakers in point of attendance and interest, so that when we return to our homes, we shall feel that our time and money have been profitably spent, and that the net results of this meeting shall be reflected in a very considerable increased membership list and that the dues may be so fixed that there shall be some seasonable relationship between the privilege each one of us is entitled to receive by reason of our membership, and that which we now actually pay for.

I take this opportunity, the first one presented, of thanking you for the very great honor of having chosen me for your president the past year. I assure you the task so far has been a pleasant one, and I can unreservedly recommend the office to the fortunate man who is soon to follow me.

I now declare the thirty-sixth annual convention of the Carriage Builders' National Association open for such business as may properly come before it.

President Dort: The next business will be the consideration of the nomination of the next president.

Mr. Wilson placed in nomination Mr. John Hassett for the position, which was seconded by Mr. Connelly and Mr. J. F. Taylor.

On motion, the nomination for president was closed.

President Dort then appointed the following committees:

Resolutions—W. A. Patterson, Flint, Mich.; C. F. Pratt, Cincinnati, O.; E. W. M. Bailey, Amesbury, Mass.; W. P. Snyder, Piqua, O.; Lewis Straus, Newark, N. J.

To Recommend Officers—Thos. Clark, Amesbury, Mass.; W. H. Roninger, St. Louis, Mo.; John W. Fulreader, Rochester, N. Y.; C. O. Wrenn, Norfolk, Va.; Wm. Morris, Janesville, Wis.

Obituary—C. W. Shipley, Cincinnati; Danl. W. Volz, Chicago; J. F. Firestone, Columbus, O.; Henry Higgin, Newport, Ky.; E. W. Harrell, Fairfield, Conn.

Committee on Exhibits—W. P. Champney, Cleveland, O.; O. B. Bannister, Muncie, Ind.; Wm. H. Son, Wilkesbarre, Pa,

President Dort: I wish to announce a meeting of associate members in this room at three o'clock to-morrow afternoon to elect a member of the executive committee, as Mr. Taylor's term expires.

The convention took a recess until 10 o'clock a. m. Wednesday.

SECOND SESSION, WEDNESDAY, OCTOBER 14th.

President Dort called the association to order at 11 o'clock.

REPORT OF EXECUTIVE COMMITTEE.

The report of the executive committee was read by Mr. John Hassett, which was in part as follows:

To the President and Members of the Carriage Builders' National Association of America:

It is with regret that your committee has occasion to comment on the extraordinary difference in the trade conditions in the preceding twelve months and those which were commented on at the occasion of our last convention. * * *

Your committee has taken the liberty of sending out inquiries to a number of the more important manufacturers, located in various parts of the country, asking for information from them which would enable your committee to make some comment on the strength of information thus received at first hand as to the comparative condition of business in the last twelve months and that which preceded it, as to their expectations for business for

Digitized by Google

the year to come, whether or not, in their opinion, there will be a return to normal demand for carriages co-incident with a return to a normal degree of activity in other lines of business, and as to whether or not lack of demand for carriages in this last year has been chiefly due to the general business depression or to the more general use of the automobile. From these summaries it would appear that an average of all replies received from the various manufacturers would indicate shipments of about 66 per cent. of those for the preceding twelve months, the percentages varying from 50 per cent., the extreme low limit, to 85 per cent., which was the high limit. As to whether or not the immediate occasion for the smaller market this past year was due to the more general use of automobiles or to general causes of the business depression, three-fourths of all the manufacturers answering were of the opinion that the greater part of it was caused by the the general business inactivity. Replies from dealers, however, to the same question by about the same proportion, described their falling off in sales more to the use of the automobile than to anything else. As to the ultimate effect on the market for carriages, the more general use of the automobile will have it would seem to be the general opinion, more especially on four passenger work, that the tendency will be for the automobile to infringe more and more on the use of the horse drawn vehicle and that the carriage makers will have to face the possibility of a smaller market for this class of work than they have enjoyed heretofore.

Taking the situation all in all, it would seem to be no more than the part of prudence for all manufacturers to make it a period of conservation in preparations for their output until more satisfactory knowledge is to be had regarding the market for their product.

Prices.

Under present conditions jobbers and dealers will very likely think it a favorable time to bring pressure to bear on manufacturers to induce them to make a lower price on their product. It is unnecessary to point out to any manufacturer that so far as present conditions have affected the cost of his product at all, it has resulted in an applicable increase in the cost of them instead of a decrease. Prices of supplies to the carriage manufacturer have been affected to a practically insignificant degree. The fact that manufcturers are hardly in a situation at the present time to place orders for goods in quantities that they have heretofore would have a tendency, if anything, to make the cost of those parts purchased increase instead of decrease. With a decreased product and fixed charges for running the factory practically the same, the cost of production is very substantially increased. If a reduction in price of a commodity would make a greater demand for it, as in case of some manufacturers' products, there might be some grounds for taking such a step. As a matter of fact, however, no one who does not want a carriage will buy one simply because the price may be made a little cheaper. It would therefore appear that there were no grounds on which a manufacturer could justly be expected to make a lower price for his product.

Technical School.

In view of the fact that to-day that benefit conferred by the support of the school accrues far more to the automobile manufacturer than it does to the carriage manufacturer, we have at present the anomalous situation of the carriage manufacturer supporting an institution the principal beneficiaries of which contribute nothing whatever to its support. So long as our resources are such as to enable us to do this no doubt the cheerful continuance of its support is assured. It is no more than fair, however, to note the possibility that a continuation of present conditions might result in the resources of your treasury being hardly adequate to carry this thing in addition to our other expenses, in which event the association would be confronted with a problem that would call for readjustment of some kind.

Export Statistics.

Export statistics show for the last three years a small but steady and gratifying increase in the values of carriages, and parts of, exported, increased from four million one hundred thousand in 1906, to four million two hundred thousand in 1907 and four million seven hundred thousand in 1908.



Treasurer's Report.

* * * Of recent years the requirements of the members of the association and various activities, which your committee has felt called upon to stand responsible for, for the benefit of the members of it, have appreciably added to our yearly expenses, while our income has not increased in anything like the same proportion.

The balance on hand January 1, 1908, in the treasury was something less than $3,000, an amount much less than it has been for a number of years. The excess of expenditure over income during the last year was $1,200. It is evident that this cannot be kept up indefinitely without your association using up all its resources or increasing in some way its income, or decreasing its expenditures.

Your committee is not of the opinion that any of the things that the income of the association is spent for are such that the members would care to have them given up, and the natural and logical way to meet this condition would be to increase our revenues by an increase of dues.

Trade Papers.

Your committee takes this occasion to commend to the notice

Digitized by Google

of all the members of the association the great value to our trade that we enjoy in the publication of the trade papers. The publishers of those mediums are serving us constantly so well and so faithfully that probably most of us take the service they render us as a matter of course and one that it never occurs to us we should be glad of the privilege of having. If we were deprived of them, however, for no matter how short a time there would be brought home to us a realizing sense of the extreme disproportion between the price that they ask for it and their value to us as a medium for communication of information of value to us.

Obituary.

Your committee has to report with a sense of profound regret and a loss both to ourselves as members and to the association as a body, the names of the following members who have died during the year:

Active.

Henry C. Staver, Chicago, Nov. 11, 1907, aged 63.
Ferdinand L. Graves, Rahway, N. J., Nov. 24, 1907, aged 55.
E. M. Brannick, Portland, Ore., Feb. 22, 1908, aged 60.
John B. Judkins, Merrimac, Mass., June 28, 1908, aged 73.
W. H. Kramer, New York, Oct. 8, 1908., aged 59.

Associate.

Henry Zwick, Dayton, O., Dec. 27, 1907, aged 52.
John Dohse, New York, Sept. 2, 1908, aged 51.

Respectfully submitted.
John Hassett, Chairman.

President Dort: I will say that the report of the executive committee will be placed on file and unless there is something special in connection with that report the matter will be taken up for consideration and action tomorrow.

That portion of the treasurer's report relating to the increase of dues was discussed by Messrs, Parry and Bannister, but final action was put off till Thursday's session.

TREASURER'S ANNUAL REPORT.

The treasurer of the Carriage Builders' National Association of the United States submits his report from January 1, 1907, to January 1, 1908, as follows:

Cash on hand January 1, 1907		$4,486.09
Receipts from January 1, 1907, to same date 1908:		
Enrollment fee from active members	$ 80.00	
Enrollment fee from associate members	190.00	
Annual dues	2,760.00	
From the exhibition at New York	3,312.50	
From subscriptions to the technical school	1,860.80	
From dinner tickets and sundries	454.00	
From interest on deposits	77.14	
From interest on bond of the school	45.00	
		$8,779.44
		$13,265.53

Expenses during the same period:		
Convention and banquet at New York	$ 1,610.00	
Expenses of exhibition at New York	2,497.02	
Paid to the trustees of the technical school for expenses	2,735.17	
Salary of secretary and treasurer	1,200.00	
For the expenses of the committee on freight and classification	525.89	
Reception at Hotel Astor	490.00	
Printing annual reports	440.25	
Printing and stationary	421.70	
Executive committee meeting in New York	261.80	
Postage	203.55	
Filling in members' certificates and obituary resolutions	32.00	
American Forestry Association	25.00	
Total expeses for the year	$ 10,443.38	
Cash on hand January 1, 1908	2,822.15	
		$13,265.53

We also have a bond for $1,000.00 of the Chesapeake & Ohio Railroad held for the benefit of the technical school.

In accordance with Section 2 of Article XI of the By-Laws, we report the following new members for 1907:

Active.

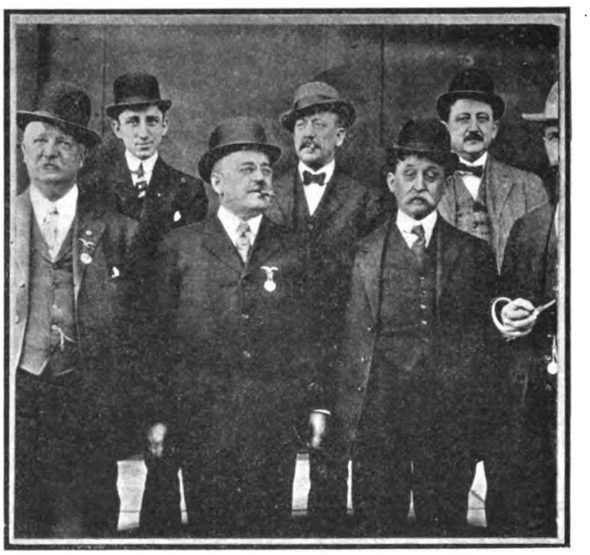
Otto Armleder, The O. Armleder Co., Cincinnati, Ohio.
Charles Barry, New York.
J. J. Cole, Cole Carriage Co., Indianapolis, Ind.
John W. Fulreader, Jas. Cunningham & Sons Co., Rochester, N. Y.
Lucius Gregory, Chase City Manufacturing Co., Chase City, Va.
Charles Holcker, Holcker Bros. Buggy Co., Crestline, Ohio.
George W. Moore, Moore & Munger Co., New York.
Lewis E. McKay, McKay Carriage Co., Grove City, Pa.
C. R. Pierce, Hume Carriage Co., Amesbury, Mass.
A. M. Parry, Parry Manufacturing Co., Indianapolis, Ind.
F. E. Riker, Walborn & Riker Co., St. Paris, Ohio.
John P. Staud, Allegheny, Pa.
Albert O. Schwartz, Joseph Schwartz Co., New Orleans, La.
W. F. Stewart, W. F. Stewart Co., Flint, Mich.
Lincoln Tyler, J. W. Renwick, Inc., New York.
Alfred J. Walker, New York.

Associate.

W. L. Crossman, Beckwith-Chandler Co., Newark, N. J.
A. P. Cleavland, Firestone Tire & Rubber Co., Detroit, Mich.
B. D. Druen, New Haven, Conn.
William J. Greening, Middletown, N. Y.
R. H. Harden, Indianapolis Dash Co., Indianapolis, Ind.
W. C. Horr, The Tucker Woodwork Co., Sidney, Ohio.
Albe Lull, Pontiac Wheel Co., Pontiac, Mich.
A. J. Miller, A. J. Miller & Co., Bellefontaine, Ohio.
J. A. Marshall, Indianapolis Dash Co., Indianapolis, Ind.
A. Nutter, The Zanesville Gearwood Co., South Zanesville, Ohio.
Morgan Potter, The Morgan Potter Co., Fishkill-on-Hudson, N. Y.
F. C. Randall, Janesville, Wis.
W. H. Rakestraw, Rakestraw Steel Reach Co., Bloomington, Ill.
George A. Taylor, Beckwith-Chandler Co., Newark, N. J.
Fred. M. Thomas, Cortland Forging Co., Cortland, N. Y.
W. T. Jessup, Wayne Wheel Co., Newark, N. J.
Robert S. Ward, E. S. Ward & Co., Newark, N. J.
A. T. Wishart, The D. Wilcox Manufacturing Co., Mechanicsburg, Pa.
H. K. Porter, Everett, Mass.

We have received contributions for the technical school during the year 1907 the sum of $1860.80

From the invitation to send delegates from local carriage associations having members in this association justifying delegates, I have received from the Philadelphia Carriage & Wagon



Builders' Association delegates as follows: William Rodenhausen, William Gerhab, Henry F. Keachline. Alternates: George Waldman, E. F. Rogers and Z. Taylor Rickards.

HENRY C. McLEAR,
Secretary and Treasurer.

The secretary's report also gave a list of new members who allowed their dues to go unpaid for three years. It included four active and three associate members.

The report was ordered placed on file.

President Dort then announced that the Honorable Nahum J. Batchelder, of Concord, N. H., master of the National Grange, had found it impossible to be present, but had sent instead Mr. Whidden Graham who was thoroughly posted on the subject of good roads and who would read Mr. Batchelder's paper entitled "The Demand of the Farmers for National Aid for Highway Improvement, which is in part as follows:

Digitized by Google

The Night Photograph of Diners at the C. B. N. A. Banquet Held at the Auditorium Hotel, Chicago, on Thursday Evening, October 15th.

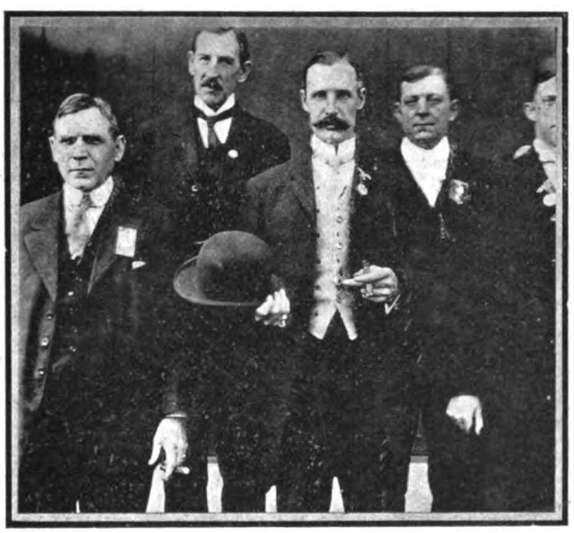
Digitized by Google

The Demand of the Farmers for National Aid for Highway Improvement.

The deplorable condition of the public roads in nearly all sections of the United States has for many years been the subject of careful consideration by the farmers, and they fully realize the great economic and social importance of substituting a scientific system of road construction and maintenance for the crude and old-fashioned methods that prevail to so large an extent at the present time. It may seem to outsiders that it has taken the farmers a long time to appreciate the benefits of improved roads, but in reality they have not been so backward as some of their critics suppose. As the chief sufferers from the rough dirt roads which constitute by far the greater mileage of the country's highways, the farmers have been foremost in favoring the general policy of road improvement, and have been using their influence to bring about a change in methods of road construction.

Up to a comparatively recent period the question of better roads was regarded as one that concerned only the local districts in which the highways are located, and it was believed that the expenses of road construction and improvement should be borne by such districts. As the result, very largely, of the persistent agitation by the farmers for better roads, the road problem has come to be considered from the wider point of view that bad roads affect not only the communities through which they run, but also the interests of the towns, cities, states and nation. There is now a general agreement that since the manufacturers, merchants and workers of the country at large are all concerned with the prosperity of the farmers, the question of good roads, as a means of improving the condition of the farmers, is of direct interest to all other classes of our people.

I assert without fear of contradiction that the establishment of a complete system of improved public highways is the most



important economic issue now confronting the American people. The conservation of our forests and other natural resources; the improvement of our rivers and harbors, railway and trust regulation; all these sink into insignificance in comparison with this question, in so far as it relates to the permanent welfare and prosperity of the nation. * * *

It is because of their earnest conviction that the improvement of our highways would be the most effective agency in promoting not only their own prosperity but that of the entire country, that the farmers are now everywhere demanding larger appropriations by the states for road improvement, and for federal appropriations for the same purpose. They believe that a part of the money raised by the taxation of all people of the United States should be devoted to assisting in the construction of better roads, and are taking action to secure the enactment of the necessary legislation by congress.

A bill embodying the principle of federal assistance was prepared by the Grange legislative committee and introduced in congress at its recent session by the Hon. Frank D. Currier of New Hampshire. This bill was carefully drawn so as to meet all objections raised against bills previously introduced for the same purpose. By decisions of the Supreme Court of the United States it has been held that the national government has power to construct, maintain or improve roads in the various states used in interstate commerce, and all roads leading into, or connecting therewith. Under the Grange bill it will be impossible for the proposed highways commission to aid in the improvement of any road in any section of the country, since all roads connect with, or lead into, some other road which is used in interstate commerce. It is believed, however, that the greater part of such appropriations as may be made by congress will be expended by the highway commissioners or other road authorities of the various states. * * *

The principle that the work of road improvement should be provided for more and more out of the public funds, and less at the expense of the abutting owners, is finding general acceptance as a matter of state policy, and in many states large amounts are being annually appropriated for the public roads. But there is a limit to the ability of the states to furnish the funds required, and it is for this reason that the farmers feel justified in urging that appropriations be made out of the revenues derived by taxing the people of the whole country, for what is so clearly a matter of national importance. * * *

The benefits which would follow the enactment of the legislation advocated by the National Grange are by no means to be measured by the mileage of improved roads that could be constructed with the appropriations made by congress. The most effective argument on good roads is the object lesson of the improved road, as contrasted with the ordinary dirt road, and each new section of properly constructed road is an inducement for the municipal, county and state road authorities to unite in placing the largest possible mileage of the highways in their jurisdiction in a similiar condition. Another great advantage resulting from federal appropriations expended under the general supervision of the proposed National Highways Commission would be the substitution for our present hap-hazard methods of road construction of a scientific system of road making. It is estimated that out of our annual expenditure for road construction and maintenance of about $80,000,000, at least one-half is wasted, through unwise methods, or the use of wrong materials. This waste would to a large extent, if not entirely, be avoided through bringing to bear on the subject the knowledge and experience of trained engineers, whose advice and services would be at the disposal of the various local road authorities. I may mention in this connection the example of France, which is admitted to have the best road system of the world. It is the opinion of experts who have given the subject careful consideration, that the superiority of the French roads is very laregly due to the fact that the national government of France not only contributes very largely to the construction and repair of the highways, but also maintains a staff of highly trained road experts, whose co-operation with the local road authorities has given the whole country an effective body of competent highway administrators.

The subject is of such magnitude, and extends in so many directions, that I have only been able to outline some of its phases. I am confident that when the attitude of the farmers is understood, and the vital importance of the question realized, that public sentiment will be practically unanimous in favor of this proposition, and that congress will at an early date enact this most desirable legislation.

Mr. Graham: I want to say in addition that the grange has been sending out letters and pamphlets and articles for the farmers to read, and speeches of members of congress. There is more interest taken in the subject of good roads at the present time than at any time during the past ten years.

The road system of the United States is in many respects the worst of any civilized country in the world, and the farmers of the country have taken a stand from one end of the country to the other on the proposition that congress should vote part of the annual appropriation for aiding the local authorities in road construction and improvement. The national grange, through its committees, is working out in detail a plan for legislation with a view that the national government should render some assistance.

Mr. Parry: Mr. Chairman I would like to speak for the farmers. There are quite a number of our friends who probably don't know just exactly what the conditions of our farmers have been in many of the states. In the state I come from we have our counties divided up into townships, divided up into road districts, and the roads are looked after in these road districts by what is called road supervisors, who know about as much in regard to civil engineering as I do, and that is not very much. The result is that our good farmer friends are warned to go out and work out their road tax or by hauling gravel or grading up holes along the side of the roads. We call them gutters. The dirt is banked up in the middle of the road for the farmers to drive over, and break out, and eventually another gutter appears in the center of the road some six or eight inches

Digitized by Google

deep, and it is anything but a case of engineering. That feature is not the worst of it. For instance, suppose that the railroad has three or four or five miles of its roadbed going through certain road districts. They have been in the habit, possibly, of paying a little money into the county treasury, which is never worked out on roads, but some energetic chap goes to the railroad and says, "what have you been paying for road taxes?" "We have been paying $1,000 a year." "Now, I will tell you what we will do with you, I will undertake to work out your road tax for $750; that saves you $250," and he makes a contract with the railroad to work that out immediately After making the contract he goes to the road supervisor and says, " the railroad going through your district has been in the habit of paying $1,000 into the county treasury for road purposes, I will tell you what I will do; I have got the contract to work this tax out, and I will give you about $250 or $300, as the case may be, to work this road tax out. You don't have to work it out; you can make a bluff at it and hire six or eight teams and you get $300 for ten days' work, and I will pocket the balance."

That, gentlemen, is the manner in which the road tax in the majority of states is worked out, and it is hardly a fair deal for us poor carriage makers to undertake to make carriages to stand up upon such roads.

Mr. Graham: I want to say, Mr. President, that the grange does not anticipate that the greatest benefit will result as much from additional roads as from a scientific comprehensive system of road making, and the education of road engineers. The work which the grange is doing now in national legislation is to try to concentrate the work of the farmers in this country. The grange is also at work on other subjects relating to the conservation of our natural resources. The whole country at large is directly benefited by a condition which helps the farmers. There is no reason why this principle of state aid should not be extended to practically all the states of the country; have interstate highway commissions working in co-operation with the local authorities.

Mr. Oakes: Mr. Chairman, it seems to me as carriage builders we ought to be among the first to encourage efforts of this sort. Many years ago a national road was under consideration by the people of Illinois. No one really knows where it actually ends, and that proposition of highways—national highways—going clear across the continent ought to be pushed and pushed hard, and after one has been constructed we ought to have possibly one or more paralleling it, and then the same proposition running north and south until we have a network of national highways that would be maintained by the government.

I think the convention ought to convey to the National Grange the assurances of our support in this matter. I move that as a convention, we do give them the assurance of our hearty support in their efforts.

President Dort: You have heard Mr. Oakes' resolution. It will go to the committee on resolutions, and be reported on by that committee.

The Secretary: I would like to say a word to Mr. Graham, and would ask him when he goes back to assure Mr. Batchelder that this association has been passing resolutions of this kind and has had a committee on roads for twenty years. We have been working continuously for twenty years in favor of good roads.

Mr. Graham: I wish to say that I am glad to know this. I wish to say, in conclusion, that you cannot get results by resolutions unless they are followed up by practical work. When this subject is up before congress we want you to write letters to your representatives asking them to favor this proposition. Resolutions of approval we are glad to have, but the main thing is active work of the individuals. We believe the plan of the National Grange will ultimately force this legislation through.

President Dort: I desire to say, Mr. Graham, in behalf of the Carriage Builders' National Association, that it appreciates very much your coming out here to-day to read this paper and to talk to us, and we will also in our resolutions convey thanks.



REPORT ON GOOD ROADS.

The next business will be the report of the committee on good roads. Mr. Keachline, of Philadelphia, is absent and the report will be made by Mr. Bogle, of Los Angeles.

The report was read by Bogle and is in part as follows:

Mr. President and Members of the Carriage Builders' National Association: Decades ago the great Sumner declared, in the United States Senate, that the schoolmaster and good roads are the two most important agencies to advance civilization; the former has very well fulfilled his mission, while the latter has been sorely neglected. But it is gratifying to know and feel that agitation along this line is giving birth to much attention and life to some legislation.

It is said that ninety-two per cent. of the 2,151,570 miles of highways of this country are unimproved, and practically the entire crops are more or less subject to the vicissitudes of road conditions. It is estimated that it takes over $150,000,000 to move these crops, and on account of bad roads and seasons, this large amount of money must be immediately available, resulting in a violent drain upon the money centres for the currency necessary to finance such a transaction, and it is not at all doubtful that, indirectly, bad roads were a factor in the late financial unpleasantness.

There are but three methods for the transportation of internal commerce, amounting to about $20,000,000,000, the railroads, waterways, and the common highways or roads. This government has donated to the railroads 44,464,719 acres of public lands; for canals, 4,500,724 acres; for river improvement, 1,980,593 acres, and for wagon roads, 2,014,084, or a total of

Digitized by Google

52,960,120 acres. In addition to this, the government has financially aided the railroads; appropriated large sums for the maintenance of the canals and waterways, but comparatively nothing for the public roads, they being left to a class of people or section of the country least able to maintain them; therefore, what might appear to be an affair of the country or state, is really a matter for the national government; inasmuch, that it directly affects every man, woman and child in the most densely populated city as well as the most isolated farmer. * * *

It is estimated by competent authorities that over the ordinary country road the farmer draws an average of 2,000 pounds, an average distance of 12 miles at a cost of $3.00, which, with improved roads, the cost of moving the same load that distance would be a little more than $1.00. Making allowances, it is certain that the cost is not one-half as much on improved roads as on bad roads. It is further estimated that 250,000,000 tons are annually hauled; this being so, the saving of $125,000,000 can be easily figured out.

The burden of inadequate transportation facilities falls not alone upon the farmer, as such figures might suggest, but upon the consumer; for example, if it costs 25 cents per ton per mile to haul products of the farm to the railroad station, the consumer must pay the additional cost without increasing the farmer's profit, and the farmer must pay an increased price for the finished product he in turn buys for his necessities. The advent and increase of the automobile has been a factor in arousing interest in road building, and has especially created a need for not only more good roads, but roads better able to withstand the hard use to which they are subjected by the speed indulged in when not under the watchful eye of various officers of the law to whom such regulations are entrusted.

It is interesting to note that just as soon as man's mechanical ingenuity is affected by poor roads, some notice is taken of the "complaint" the poor dumb beast of burden has been obliged to quietly suffer through long ages.

Road building by the government brings its own reward, in that it opens up new territory, enhances the taxable values of the present locations, increases wonderfully the earning capacity of the farmer, will increase the use of all kinds of vehicles, will save the horse, will economize in the use of oil or motive power of any sort, and, in fact, seems to be so burdened with blessings to humanity that makes it hard to understand why good roads have been neglected as long as they have.

In our search for data on this subject one of the replies was to the effect that "there is too much said or written on the road question in proportion to the work really done or accomplished. We therefore recommend the adoption of the resolution agreed on at the annual meeting of the National Grange in November, 1907, which covers the ground completely and could not well be improved upon.

Whereas, The improvement of the highways of the country is a matter of general public concern, and should properly receive the attention and assistance of the national government, and

Whereas, The revenue raised by taxes paid by the people of the country as a whole should be devoted as far as possible to purposes which will benefit the greater number of the taxpayers in all sections of the country, and

Whereas, No argument can be advanced in favor of the annual appropriations by congress on behalf of river and harbor improvements that does not apply even more strongly to the improvement of our public roads, therefore

Resolved, That the C. B. N. A. favors a general policy of goods roads construction by the various municipalities, countries and states, and

Resolved, That we favor the immediate enactment of legislation by congress making liberal federal appropriations for the improvement of the public highways of the country, these appropriations to be expended in such manner as congress may prescribe, and

Resolved, That arrangements be made for giving these resolutions wide circulation in the trade journals and in circular form.

Respectfully submitted,
HARRY F. KEACHLINE, Chairman.

President Dort: You have heard the report of the committee on good roads; what shall we do with it? If there is no objection it will be received. I am not aware from what was said on this subject that we are entirely through with it, and if it is coming up tomorrow a resolution is to be embodied in our record here, and it would seem if you are going to take a position on good roads you want to take it and do something. If it requires legislation somebody ought to be representing the carriage builders to see on our part that our wishes are at least partially respected, so that I hope when this resolution comes up there will be something in the resolution that will make the work something more effective than simply a resolution.

NATURAL RESOURCES: THEIR WASTE AND CONSERVATION.

The next business in order will be an address by Dr. Thomas E. Will, secretary of the American Forestry Association, who will address you on the subject, "The Conservation of Our National Resources." I think we are quite familiar with this subject in a general way.

Mr. President and gentlemen of the Carriage Builders' National Association:

I have been asked to speak on the subject named, and also to say something on what the world is doing in the way of conserving its forest resources. These are really two subjects, both large. I shall endeavor, however, to sketch both, and in doing so to follow the subject the man gave his barber as he sank in the chair and said, "cut both short." The barber said, "Do you mean the hair and whiskers?" "No," he said, "I mean the hair and the conservation." I shall try to cut both, the forestry and the conservation, short, considering the hour, and by your leave, I will hand my paper to your secretary, and speak without it.

We are destroying our natural resources. Fish and game, gas and oil, coal and iron are going at an ominous rate.

Forest destruction is a national menance. Under present policies, our forests will last but one-third of a century. In recent weeks we have been burning them like chaff. Already the shadow of the timber famine is upon the land.

Between forest and stream subsists an intimate and vital connection. Forest destruction on slopes means floods. In a single year (1902-3) eighteen million dollars' worth of property were thus destroyed in the South. One hundred million dollars' worth are destroyed each year in the nation by the same cause.

Our soil is likewise disappearing. A billion tons of earth, 90 per cent. soil, forming a solid mile square and a fifth of a mile deep, and worth a million dollars, is each year swept into our rivers and harbors.

Our inland waterways are involved. Nature endowed us with the greatest river system on earth. Instead of improving it, we have been impairing it. The President has informed congress that our river system is worthless and is used less than fifty years ago. We are dumping into our rivers and harbors the soil above mentioned. Our attempts at stream habilitation have been spasmodic, unsystematic and unbusiness-like. But our nation has outgrown its railway system, and railway leaders admit that steel highways must be supplemented with water highways. To this end, we must, among other things, prevent floods and hence we must care for our forests. As Ambassador Jusserrand says, "No forests, no waterways."

As our coal supply wanes other sources of power must be sought. Electricity is the coming Titan. A most convenient and practical source of electric power is waterpower. The waters flowing down our western mountains exceed in value the metals and minerals in those mountains, but uncontrolled waterpower is a curse; and, as seen, control depends in large part upon forestry.

The reclamation of our western deserts is of fundamental interest. Our arid and semi-arid region equals in area the Roman Empire. Under the law of 1891, the national government is converting this into a water garden. But this work depends upon streams, and streams upon forests. Without forest conservation, irrigation must fail.

Upon our national domain is not only the dry area mentioned, but a wet area, as large as New England, New York and New Jersey. It compiles our swamp and overflowed lands. Drained and properly tilled it would feed the population of the United States. Most of it is susceptible of drainage and is prodigiously productive. A national drainage bill is before congress. So high has risen the tide of public sentiment that some such bill will doubtless soon become a law. But, like the other interests above mentioned, national drainage relies in considerable measure upon forestry; for not only must the surplus waters be removed but their return must be prevented. Hence overflows and floods must cease; and, to this end, protective forests must be maintained.

In thus digging the foundations from beneath her feet, the United States is but following the example of older nations. These have usually destroyed in large measure their forest resources and then, sooner or later, reformed. * * *

Experience shows that forestry is an investment, the net returns of which are quite directly proportional to the outlay. Note a few corroborative statistics:

Country.	Expenditure per acre.	Net Revenue per acre.
Wurtemberg	$2.05	$6.60
Saxony	3.00	5.30

Digitized by Google

Baden		3.58	4.42
Hesse		1.25	4.29
Switzerland		1.32	2.55
Prussia		1.58	2.50
Bavaria		1.99	2.22
France		.95	1.75
Austria		.56	.21
United States	1905-06	.007	b .0001
	1906-7	.0093	.00086

b Deficit.

In such company, the position of the United States is striking. Where Wurtemberg, leader of the group, spends $2.05 per acre per year and nets $6.60 per acre per year in return, the United States spends about nine mills per acre and nets about eight-tenths of a mill in return.

The United States has great possibilities as regards her forests. Her total wooded area covers 700,469,760 acres. Of this, the States own 3,107,961, and the nation, 167,992,208. The total area of publicly owned forests in the United States (171,100,169 acres) thus amounts to 24 per cent.

The privately owned forests are still swept by the broom of destruction. On the publicly owned forests, however, results are being accomplished which should encourage every heart. Success requires the extension of the public forest area and the application of forestry principles to the privately owned area.

Thus far, our national forests have been confined to the public domain. It is imperatively necessary that they be extended to privately owned land, notably in the Appalachian and White Mountain areas. The Appalachian bill, so earnestly urged by so many representative citizens and organizations, and so often passed by the senate, only to meet defeat in the house, must be pressed to its passage. The work of agitation and education must be vigorously prosecuted. The experience of the Old World must be availed of in the New. The resources still remaining must be conserved; others, where possible, must be created, and our people must learn to live, not simply for to-day, but for the ages ahead, during which our nation should increase in all the elements which make for the largest life both of the individual and of the commonwealth.

Mr. Bannister: I am sure we have all been delightfully entertained and instructed by Mr. Will's address, and I want to offer the following resolution:

"The progressive failure of our timber supply, intensified by recent forest conflagrations, the intimate connection between forests on the one hand, and flood prevention, soil conservation, inland waterway and water power development, with irrigation of arid and drainage of swamp lands on the other, make the question of forest conservation an issue of gravest national import. Success in administration of our national forests contrasts in striking manner with failure in the administration of most of our private forests. Experience, home and foreign, proves that intelligent expenditure on forestry is a remunerative investment. The Governors' Conference, the unanimity of the press and the rising tide of public sentiment bear increasing testimony to the popular demand for forestry conservation. The Appalachian-White Mountain Bill, again passed by the United States Senate at its last session, represents the next step in practical forestry. The Carriage Builders' National Association of the United States, in its thirty-sixth annual meeting assembled, therefore earnestly urges the House of Representatives of the United States certainly and speedily to enact this measure into law at the coming session of congress."

The resolution was referred to the committee on resolutions.

President Dort: We will proceed to the next matter before us, and that is the report of the committee on fire insurance, by Mr. H. E. Miles. Mr. Miles is not here, and Mr. Warren Oakes will make the report in his stead.

REPORT OF INSURANCE COMMITTEE.

Mr, President and Members of the Association:

The annual loss of property by fire in America is of such an amount as to be past understanding. In thirty years the United States has burned up as much property as would be represented by the national debt of Russia or Great Britain.

Unfortunately the loss is on the increase. It was for 1907, $215,671,250. This amount is nearly 60 per cent. more than the average for thirty years. The average for the first four months of the current year was at the rate of $275,000,000, for the United States and Canada together, being again an increasing amount.

Those of us who have not directly suffered from fire congratulate ourselves on that score, but the truth is we also suffer greatly, for the fire loss in the last analysis is borne, so far as insurance goes, not by those who burn, but by those who continued in business and paid the premiums.

We like to think well of ourselves and our country. Should we not, however, be ashamed of ourselves in view of the fact that the per capita fire loss in the United States during the past year has been $3.00 per capita as against 33 cents in the principal European countries, including England, France, Germany and Italy? That is, nine times more loss from fire, waste and interruption of business from fire in the United States than in western Europe. The matter is so serious that the government itself should take up the question with a view to diminishment of fire hazard both for the sake of those who are likely to burn and of those who through the payment of premiums are contributing such vast sums toward the losses of others.



The ten years' average fire loss up to the end of 1906 equals 36 per cent. of the total receipts of the federal government; 37 per cent. of the net earnings of the railways of the United States; 80 per cent. of the customs receipts of the federal government; 122 per cent. of the total dividends paid by our railways; 140 per cent. of the pension charge; 156 per cent. of the commercial failures; 650 per cent. of the interest charge on the national debt.

Certainly our people will sometime make a great, national effort to save for ourselves and our children this drain upon our resources and our energy, which at the present rate promises in every decade to equal the frightful total of two and one-quarter billion dollars? No more striking comment upon our extravagance and our unbusinesslike neglect could be cited.

The remedy lies not in the increased purchase of insurance, but in prevention. A recent tabulation covering 80,000 fires disclosed the fact that 52 per cent. were caused by petty neglect and carelessness, the table showing 21 per cent. due to carelessness in heating, 11 per cent. to matches, and 20 per cent.

Digitized by Google

to items of petty neglect. This average applied to the total loss of the country would show $100,000,000 to be saved in this simple way, and four-fifths of the remainder would doubtless be saved by installation of automatic sprinklers and proper construction of buildings.

There is no reason why any fairly well built factory should not equip itself under advice, and reduce its annual insurance charge 80 per cent. by so doing, so that its insurance bills will be quite inconsiderable in amount thereafter. What is of more importance such equipment practically eliminates the possibility of fire loss and interruption of business.

The carriage builders of the United States, who have in the past paid higher than average rates, can soon place themselves upon a level with, for instance, the cotton manufacturers, who once paid the highest rate of all and who now pay the lowest and who are so well protected that almost never do we hear of a fire loss in that industry.

Some object to mutual insurance, not realizing that in an important sense all insurance is mutual. We speak with confidence of mutual insurance, but we do not mean by that to endorse any and all mutual insurance companies, for mutual insurance, like any other business, must be managed upon the most approved lines and with utmost judgment if it succeeds. Our endorsement of mutual insurance ably conducted by those who are thoroughly experienced in that business must not be held to cover any sort of mutual insurance. The days, however, of wild cat and careless insurance under the guise of mutuality are so far past that it may be said most all of the mutual companies now in active operation are worthy of respectful consideration.

H. E. MILES, Chairman.

support of everyone engaged in the manufacture of carriages and every one engaged in the manufacture of hickory supplies for the carriages.

The forest service of the government is fully alive to the situation and they are doing good work, but they will only do what its people require, and the people who as a whole are interested in this work are not yet fully awake. And your committee has induced the forest service to make this exhibit and has induced the representative of the National Hickory Association to be present with us to-day, hoping that they may be instrumental in bringing to your attention the importance of the work that they are both trying to do for your interest.

Within the period of my own experience, which extends back for twenty-five years, I have seen the hickory timber, which can be procured in large quantities, practically exhausted in all states north of Tennessee, and we are now at work on the very outer edge of the supply in Mississippi, Alabama, Georgia and Florida.

With the constant increasing demand that there will be for this material, it is perfectly safe to predict that unless some substitute for it can be discovered or unless the present supply can be handled in a much more economical way in the future than it has been in the past, that at the end of another twenty-five years, there will not be enough of it left to supply the demand.

With your permission, Mr. President, and gentlemen, I desire to introduce to you, Mr. H. D. Hartley, the secretary of the National Hickory Association.

President Dort introduced Mr. H. D. Hartley, of Detroit, Mich., secretary of the National Hickory Association.



The report was referred to the executive committee.

On motion of Mr. Wilson the association thanked Mr. Graham, of the National Grange, and Mr. Thomas E. Will, of the Forestry Association, for the addresses they made.

REPORT OF COMMITTEE ON TIMBER SUPPLY.

President Dort: The next report will be on the Timber Supply, by Mr. O. B. Bannister, of Muncie, Ind.

Mr. Bannister made the following address:

Mr. President, and gentlemen: My own report will be very brief, as I wish to give my time to Mr. H. D. Hartley, secretary of the National Hickory Association, who is here by my invitation and who can and will tell you as much, or more, about the hickory timber supply than any other one man in the country.

That hickory timber, which is the only known wood for use in the running gear of light vehicles, is being exhausted at an alarming rate is a well known fact to every one who has given the matter any thought or study, and that it behooves not only the carriage manufacturer but every one interested in the proposition from the carriage to the tree to render whatever assistance they can to preserve, foster and protect the present supply, and to encourage its future growth, is a fact so well known to those that are familiar with the situation, that they really have but little patience with those who are "asleep at the switch," and that do not know or do not care that the express train, which we might name "Consumption," is rolling along to disaster, and a disaster that will in a measure be caused by their neglect and indifference.

Your committee has been instrumental in inducing the forest service to make in exhibit at this convention. This exhibit is made without any expense to the association. Individual members of the committee have aided the National Hickory Association in their work, which is a work that should receive the

MR. HARTLEY'S ADDRESS.

Mr. Hartley addressed the meeting as follows:

Mr. President and Gentlemen: It is a pleasure to meet for the first time the Carriage Builders' National Association. My interests have been along the line of hickory during almost my entire life, and I think practically all of you have been the consumers of it.

Now the National Hickory Association is a peculiar organization compared to a great many other organizations. It is only a few years old. It was brought about to conserve our timber supply of hickory in the United States.

To bring you in closer touch with our organization, it would be well to tell you how we started. Some three or four years ago several of the largest manufacturers of hickory wheels, shafts and spokes and other vehicle parts, realized that they would very soon be unable to secure their raw material for hickory if they proceeded as they had been proceeding in the past. They knew they would have a problem to take care of. It seemed that no relief could be secured by personal influence. The matter was brought to the attention of the United States government through the department of forestry, and they were asked a number of questions—whether we used the hickory of our country to the best possible advantage, and how long the hickory supply of the United States would last the way we are going it at this time. The forestry service went over the facts and they gave the answer that they could not answer whether the hickory supply was being used economically or not because no facts had ever been brought to their attention. In regard to the supply of hickory timber as to how long it was going to last it was learned that the government did not know just exactly where their supply of hickory timber was coming from.

Then they took the two problems of economical use. They said those are things that interest the trade of this country to the extent of the carriage industry and the carriage industry is based absolutely on hickory timber. Without hickory timber

Digitized by Google

we cannot make carriages. The government made tests and the results showed that we were making a very big mistake in throwing away in the forests a great deal of the hickory which is usable, and those tests were shown to the Carriage Builders' National Association by the forestry service, especially at Niagara Falls. The result of those tests showed that we were making our vehicles a great deal on appearance. We were using white wood, specifying for white wood because it is a great deal nicer than red wood. In a great many cases it appeared to be a little tougher and in cutting a tree the white wood was usually better than the red wood, and consequently the red hickory received a bad name. They made these tests and tested clear white hickory, and two and a half years ago the government went to these men who had supplied the material and said so far as we can find out there is no difference in the strength of red and white hickory. Now, understand, that means the clear hickory, free from defects. It is a fact that the red hickory, of course, shows more defects, but as you all know in vehicle parts you can only use clear timber, and you must not use defective stock because it does not go into the vehicle.

That was the first fact established. That was a very important fact because the various companies interested said if we can use red hickory that we are now allowing to lie in the woods, it will probably be a saving of a large percentage; it will probably prolong the life of hickory, and it was suggested that there be a meeting called of the hickory consumers of the United States. The government had representatives there, and they gave the facts to the general public, and furthermore they said that they had taken up this matter and had sent experts into the field and from their estimates there was only between twelve and twenty years' supply of hickory in the United States. They based that opinion upon the amount of territory that the mills had covered in the last thirty years. It was thoroughly established that the supply of hickory is limited to a maximum of twenty years.

Well, we met there at Niagara Falls, the first meeting, and it was thoroughly demonstrated that it was very essential that something be done to find a substitute for hickory or take up the question of whether it was practical to plant hickory or whether it was practical to economize in our present use of hickory. On this question of red and white hickory it was shown that we were not economical. The government said they would be glad to carry on the work further on account of the effect on the trade interests of the country, and the hickory consumers formed a preliminary organization to assist the government in this work. The government sent men out into the field who examined practically all the timber tracts—large timber tracts, as much as they could get at for the last two years, and they did this in co-operation with the National Hickory Association which was supported by men vitally interested in it.

They came to the result that all the hickory which they had—that hickory could not be grown to a merchantable size in anything less than sixty years, and then only certain species by that time. They have figures which they have furnished us which practically establish the fact that we cannot grow hickory in less than sixty years, and on the average it will take from 80 to 100 years to grow a tree twelve to fourteen inches in diameter; that there would be a lapse of twenty years in which the present supply would go and sixty years more in which we must grow it again; so that it was impossible, of course, to shorten the time required to grow a hickory tree, so we had to take the road of least resistance and try to economize in our present use of hickory. We took the facts developed by the government in regard to red and white hickory. We believed that by the use of red hickory, which was thrown away on account of there being no market for it, we could economize in its use. We did that. We have been delayed somewhat on account of the reversal of trade which has occurred in the last year. We have been timid in having standard grades, adopted for various poles, rims and shafts, but that proposition is now being carried on through our association so that very shortly standard grades will be made and the vehicle man will know what strength is required for the various parts of the vehicle, and if he is making a certain class of vehicle he will know what grades to specify in that vehicle, and those grades will be supported by the carriage builders themselves and the manufacturers, and they will decide what those grades shall be.

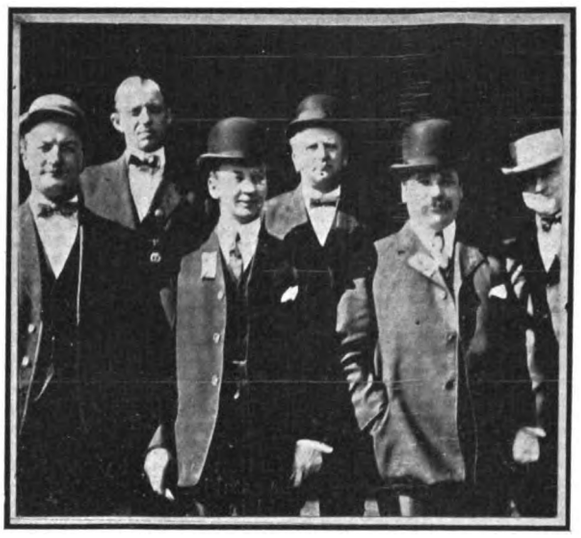
In regard to substituting woods we are now carrying on tests in the forestry service of the United States government with California woods and with woods from the Philippines, but gentlemen, they have found nothing which has the characteristic toughness and properties of hickory. They have been able to recommend some substitutes, such as maple axle for hickory axles, because that is a point where toughness does not enter as much as into spokes, shafts and rims. The government showed the results of those tests and they gave those recommendations to the large manufacturers and they have adopted those woods through the co-operation of the National Association.

The next point that we had to take up was to get this red hickory onto the market and our organization at that time was composed of individual members. Now these facts were established that we could economize in our present use, but we were met with the obstacle from the trade—they came out and said, we have always used white hickory and white hickory has sold our goods and unless everybody changed, why we connot afford to, in spite of the facts given by the government, because it will affect our trade. We met those objections in this way: We demonstrated to the trade this question of hickory supply. Our National Hickory Association was changed a year ago from an association of individual members into an association of associations, and our policy was made definite as to what we wanted to do. The idea of the association is to include in our association various associations, such as the Carriage Builders' Association, the Wagon Manufacturers' Association and all those who are users and manufacturers of the products, and by everybody regulating the use of hickory based on facts which the government gives us we expect to prolong this life of hickory.

We found that the handle manufacturers were going out into the forests and cutting down only white hickory for handles, and we found that the vehicle parts people and a great many of the carriage builders themselves were going into those forests and competing for timber with the handle men who were cutting only the saplings in the forests, and not giving the tree a chance to grow to a larger size. The Hiskory Association went to the Handle Association and we have to-day put it on a basis whereby the handle manufacturers will eliminate the specification of white so far as the appearance is concerned in their specifications and will use a great deal of the cutting and waste of trees of large dimensions in the South and take the handle men out of the forests to a great extent.

We have been able to get the United States government itself who are large manufacturers of handles, to eliminate the feature of white hickory in making handles.

The point that probably goes through your mind is what good is that to the vehicle manufacturers? Three years ago when the timber men realized the shortage on hickory they antici-



pated that in a very few months that the output of their factories was going to be governed by the supply of material. It was a question of the ability of every manufacturer of hickory to furnish the material. It was not a question of whether you had it or whether the stock was there, but you did not have the stock. Gentlemen, we are going to face those conditions for a great many years yet—that is, the ability of our hickory manufacturers is going to be limited to their being able to secure the raw material, consequently the men who use the parts from those factories are the men who have got to pay for the advance in the raw material, because the price that you pay must govern the cost of the labor for getting the raw material.

Now, if we can have an association whereby we may ease up and make it easier for the man who goes into the forests and cuts the raw material by eliminating a certain amount of cutting which to-day is waste product and revert that to an economical use, it will put your entire hickory using industry on a cost of getting out the raw material, and in so doing you are standardizing the prices of all hickory parts that go into your vehicle, and it is along those lines that it will be of the greatest benefit to the vehicle builders.

Digitized by Google

It is a move in the right direction recommended by the government and by various large associations, also by the conservation congress which was organized at the suggestion of the President of the United States last year. It is a move to prolong the life of our natural resources.

The point I would like to have the Carriage Builders' National Association consider is the proposition of the National Hickory Association that the Carriage Builders' National Association become members of our association. We would be glad to have one of your members make a motion to that effect.

President Dort: Mr. Wilson will read the report of the trustees of the technical school.

Mr.Wilson: In the absence of Charles J. Richter, the chairman, and also of Mr. Johnson, the superintendent, I will read the report.

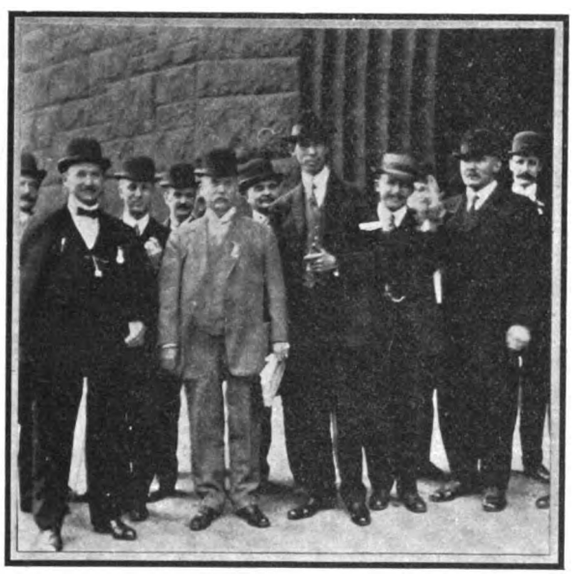
REPORT OF TRUSTEES OF TECHNICAL SCHOOL.

The report was as follows:

Mr. J: D. Dort, President, Carriage Builders' National Association, Chicago, Ill.

Dear Sir: In making our report for the school year, we have to refer to that from Mr. Johnson, our instructor, which covers the work in detail and outlines the prospects for the coming year.

The school is now thoroughly equipped with modern appliances, and since its removal to the new location in the building of the Mechanics' Institute, it has the additional advantage



of being able to afford our pupils all the facilities of the instruction which this institution offers in other branches of education, which are useful to the young man that we seek to train to our own industry.

It is a source of great satisfaction to us to point out that your school, which has now been established twenty-eight years, was one of the earliest in the field in promoting this good work among deserving young men, and we feel confident that the liberality which has enabled us to carry forward your work has redounded to the benefit of our trade by raising the efficiency of your men.

We trust that during the coming year the members will visit the school whenever they come to New York. The building, with its various classes, its great circulating library, is very interesting and worth a visit. Our own class will show what has been reported of the progress we have made and give a clear indication of our future course. These visits will not only be a source of encouragement to our instructor and his pupils, but may give us the benefit of wise suggestions for our guidance—those we solicit at all times and shall receive with appreciation.

We desire to call attention to the generous support which the school has always received from the trade newspapers, especially during the past year, which we would be pleased to see suitably acknowledged by resolution in convention.

C. S. RICHTER, Chairman.

To the board of trustees of the technical school, Charles J. Richter, Esq., chairman.

Gentlemen: I herewith present my report of the technical school for the year which closed August 31, 1908.

Day and Evening Classes.

These classes opened for the season in the school rooms in the Young Men's Institute, 222 Bowery, New York, on October 14, 1907.

The total enrollment in the day class was seventeen. These men came from widely separated sections of our country, the States of Iowa, Massachusetts, Ohio, New York and Wisconsin being represented. There were only three pupils from Canada. Twelve of these men were bodymakers, two were general woodworkers, two were office men, and one was a draftsman. The oldest was thirty-nine years, and the youngest eighteen years of age, and the average age of the class was a little more than twenty-six years. The attendance for the season was 96.04 per cent.

The total enrollment in the evening class was thirty-four, who were residents of Greater New York, Newark and New Jersey. Twenty-one of these men were body-makers, four were proprietors, one superintendent, one painter and one assembler. Their ages varied from thirty-nine to seventeen years, and the average age was twenty-seven and one-half years. The attendance was excellent, it being 89.74 per cent. for the season.

There were seven graduates, most of whom attended both the day and evening classes, and their average age was twenty-six years. The names of the graduates follow: August A. Reipe, Carl H. Hamann and Andrew T. Stone, of New York City, William H. Clark and Clarence D. Patterson, of Amesbury, Mass., Wiliam Gysbers, of Dubuque, Iowa, John P. Sehl, of Waterloo, Canada.

Corresponding Department.

In this department I have to report as follows on the work of the past year: new pupils, 53; pupils taking advanced studies, 22; lesson papers sent out, 1,849; drawings received, 960; examination papers received, 144; rating cards sent out, 1,104; letters received, 987; letters sent, 922; number of graduates, 5; average age of graduates, 35 years.

Prizes.

The scholarship prizes were authorized again this year, and were awarded to William Gysbers, of Dubuque, Ia., a member of the correspondence department, and to Carl Hamann, of New York City, a member of the evening class.

These young men completed the course and were among the graduates previously mentioned.

In General.

Although the trade has suffered severely from the business depression of the last year, we have reason to feel encouraged by the good work done in all departments of our school. The day class was much larger than ever before, and the evening class was as large as we could accommodate, while the correspondence department did rather more than an average year's work. In our present quarters, with plenty of room, and with the finest possible light, both for the day and evening, we may confidently hope that more young men will avail themselves of this splendid opportunity to extend their knowledge of carriage and automobile drafting.

Before closing, I wish to thank the board of trustees for their kindness to the writer of this report.

The various journals devoted to our trade are ever kindly disposed toward our school, and for this we are grateful and tender our thanks herewith.

Respectfully submitted,
ANDREW F. JOHNSON, Instructor-in-Chief.

Mr. Wilson made a motion that a committee of five be appointed to solicit funds for the technical school, about twenty-five hundred dollars. The chair named Mr. P. P. Hunter as chairman of that committee, Mr. John McGrath, Charles Lancaster, Mr. Neutzel and John F. Galvin.

President Dort: The next report will be the report of the committee to recommend officers for the next year, Mr. Clark, chairman.

Mr. Clark of that committee, read the following report:

Executive Committee.—(Term of Three Years.)

C. F. Kimball, Chicago; Warren D. Oakes, Indianapolis; C. A. Lancaster, Merrimac, Mass.; Geo. Brockway, Homer, N. Y.

One member for board of trustees for technical school.—Wm. W. Ogden.

For secretary and treasurer.—(term of one year.) Henry C. McLear, Wilmington, Del.

Vice-Presidents.—Maurice Connolly, Dubuque, Ia.; W. H. McCurdy, Evansville, Ind.; Jacob Geibel, Montgomery, Ala.; Elton S. Bogle, Los Angeles; Fred O. Neutzel, Louisville; Samuel K. Page, New Haven; S. B. Rooling, Wilmington, Del.; Daniel W. Voltz, Chicago; Charles Cathan, Beloit, Kan.; Al-

Digitized by Google

bert O. Quartz, New Orleans; James Neal, Amesbury, Mass.; C. W. Nash, Flint, Mich.; J. C. Moon, St. Louis; John Bunt, Fremont, Neb.; John E. Hayford, Newton, N. H.; John H. Mount, Red Bank, N. J.; C. H. Davis, Waterloo, N. Y.; R. J. Corbitt, Henderson, N. C.; C. T. Pratt, Carthage, O.; T. J. Storey, Buckville, Ontario; Geo. Waldman, Philadelphia; Owen Lilly, Memphis, Tenn.; E. E. Hughes, Lynchburg, Va.; Charles Abresch, Milwaukee, Wis.; S. P. Nichols, Jackson, Ga.

THOMAS CLARK, Chairman.

President Dort: If there are no other nominations, these will be considered the nominations of the association. The question of taking a vote upon this, of course, will be considered tomorrow.

The next business will be the election of president.

Mr. Wilson: I move that the secretary be empowered to cast the ballot of this association for Mr. John Hassett, of Amesbury, Mass., as there is no other candidate for the office. Carried.

Mr. Hassett: Mr. President and members of the association: At this time I think most of you would get more satisfaction out of a ten minutes' lunch than in listening to a speech. I wish to thank the members of the association for the distinction and honor conferred upon me. It is a distinction and it is an honor to be the head of an association which covers as much territory as this association does with so many members connected with business interests of so great a magnitude. I also want to thank you on behalf of the neighborhood from which I come, which is also honored by my selection.

I hope that none of the members, who may not be familiar with the working of the association's organization, will be tempted to waste any sympathy on me for fear that my intellectual shoulders will not be large enough to carry the burdens placed upon them. I want to assure you that while the office of the president of the association is an honorable one and distinctive one, there are other shoulders that are ready to take the burden. The fact of the situation is something like the Irishman who was asked about his situation, and he said he had the finest job on earth, that he had to carry the bricks and mortar to the top of the chimney and the other man did all the work.

You elect every year a benevolent despot, who sees that none of the members of the association get very far away from anything, but who is perfectly willing that somebody else should take the position of leader, but he will see that the traces are kept tight all the time.

My election, perhaps, may be fortunate in another way—in removing an impression that may have gained some ground from the character of some of my predecessors. I don't wish to cast any reflection upon those gentlemen, and I am sure it will not be needed by those who know them as intimately as I do, but those who don't know them and don't know their solid intellectual work, their willingness and their self-sacrifice for the benefit of the association, might be misled by their more superficial aspect, and might draw the conclusion that the qualities that were needed to fill the presidency of this association were mere superficial and graceful attributes, rather than that of an intellecutal man of affairs. Now, I do not want you to think in any way, as I said before, that I am disparaging the other qualities that they have, which are not needed among those who know them, but you know the attributes which were superficial and appear upon the surface that are more apt to appeal to those who have not that intellectual acquaintance, and I think upon that account my selection may have some effect in correcting that misapprehension. Gentlemen, I wish to thank you again.

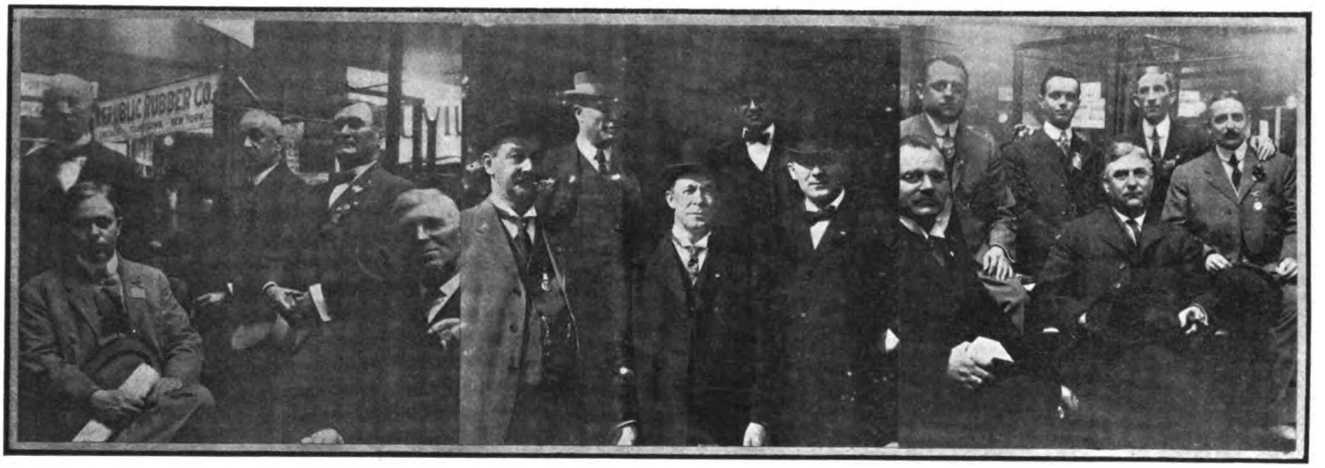
The association then took recess until Thursday morning, October 15th, at 10 o'clock A. M.

THIRD SESSION, THURSDAY, OCTOBER 15TH.

The meeting was called to order by President Dort at 10:30 o'clock.

The first address on the program was that of Mr. C. B. Morrell, of the Sheldon School, Chicago, on the subject of "The Science of Business Building." Mr. Morrell gave some very good advice in that respect.

President Dort: The next order of business is the report of the committee on freight and classifications, but Mr. Oakes, of the committee on new members, wants to get away soon and requested that his report be put in now, so we will hear from Mr. Oakes, on the report on new members.



Mr. Oakes read the report of that committee as follows:

Mr. President, and members of the thirty-sixth annual convention of the Carriage Builders' National Association of America:

Your committee on new members sent a letter to each of the present members of the C. B. N. A. and asked him to get, at least, one new member. Some answered and some did not. If each one would just take hold and work, it would double the membership in a very short time.

Every member should make himself a "committee of one" to secure new members. For your talking points, remind them that the C. B. N. A. supports the carriage builders' technical school, not only with their labors, but also to the extent of $2,500 a year in money. The annual conventions and exhibits keep you in touch with the latest improvements in carriage construction. They also give you a chance to meet your friends and make new ones and by the interchange of ideas, broaden one's ideas and methods of factory management.

The annual dues entitle you to a ticket to the annual banquet which, in itself, is worth $5.00. The accessory man must, of a necessity, become a member before he can make an exhibit at the convention. These exhibits are a big help in selling their goods, of course, and in keeping their names and their wares before the public. The C. B. N. A. makes permanent a strong force for "good roads." It helps to keep the railroads from making arbitrary freight rates and arbitrary classifications. It reduces and abolishes many abuses in the carriage and accessory trades. It has a committee on fire insurance that gives its cooperation, not only towards securing low rates, but also towards reducing the physical hazard of the risks of its members. It is

Digitized by Google

constantly on the lookout for the preservation of timber. In connection with this, there are conducted many tests of different lumber as to strength and as to fitness for use in a vehicle, and there are also tests to find substitutes for lumber that is becoming scarce.

The entrance fee is $5.00 and the annual dues are $5.00 for a manufacturer of carriages, buggies, wagons, sleighs and automoblies. The entrance fee is $10.00 and the annual dues for a manufacturer of accessory parts.

Our committee has had an unusually successful year, considering the new members secured, and we desire to see the good work continued. It is surprising how many men would like to become members of the association if the matter is put at them in the right way.

Mr. Oakes: I would also like to add, we have to date received new members as follows: Active members 31, associate members 10 and about ten more to hear from.

On motion the report was received and placed on file.

President Dort: The next will be the report on freight and classification, by Mr. Theodore Luth.

Mr. Luth read the report as follows:

REPORT OF COMMITTEE ON FREIGHT AND CLASSIFICATION.

Mr. President and members of the C. B. N. A.:

Gentlemen: I will only briefly outline what has been accomplished, as detailed reports, furnished by your committee, have appeared from time to time in the trade journals.

Last fall after having secured a favorable hearing to a petition which we filed with the official classification committee,



Theo. Luth, Chairman Committee on Freight and Classification.

asking for a change in classification of heights of crates from 30 in. x 94; to 34 in., and 50 in. x 94 in. to 54 in., with length requirements eliminated on both, they recommended a change on low crates in accordance with the height that we requested, which went into effect January 1, but at that time our request to eliminate the requirements as to length of crate, and to change the high crate, did not receive their favorable consideration.

In March we again took the matter up with them, urging that they recognize our petition asking for change in the high crate from 50 in. to 54 in., and the elimination of requirements as to the length of crate, which they acted upon at their April meeting, making the high crate 54 in., but instead of eliminating the requirements as to length, they changed same from 94 in. to 100 in. on both high and low crates. This change took effect July 1.

We still have before them our argument asking for the crate elimination of the requirements as to length of crate, and we have reason to believe this will be favorably acted upon in the near future.

In April your committee took an active part in filing protest before the Southwestern Tarriff Committee against the proposed unreasonable minimums on carloads which they were about to put into effect. A joint conference was arranged between the Southwestern Traffic Committee and the various vehicle shipping interests, and after a number of meetings held in St. Louis and Chicago, the executive officers of the railroads took the matter in hand and agreed to meet the vehicle shipping interests in a joint conference, where an agreement was reached that brought about a revised schedule of minimum weights and rates to the southwest, which was very satisfactory and which we believe the carriage trade without exception fully appreciates.

The latter part of July we petitioned the Southern Classification Committee to recognize our arguments previously presented in favor of changing the classification on low and high crates (same as we did before the official classification committee) at their meeting held early in August. The Southern classification committee recommended that the classification for crated vehicles be revised in accordance with our petition, from 30 to 34 in. and 50 to 54 in. We understand this change is to take effect about Nov. 1.

We have, therefore, accomplished a very important change in the classification of heights of crates throughout the country, as these changes have also been recognized by the Western classification committee, who have amended their crating requirements to conform with the new heights of crates on goods shipped from the official territory.

We also asked for a re-hearing of our former petition before the Southern classification committee with reference to change in the classification of vehicles from second class 8,000 lbs. minimum to third class 10,000 lbs. minimum, but regret to state that we received no encouragement from them at this time, but hope for favorable action later.

It was reported in the trade journals just prior to the meeting of the Western classification committee, which was held in Manitou, Colo., in July, that they would make some radical changes in advancing the minimum weight and rates on vehicles in carloads, but in accordance with the promise which the executive officers made us at our last joint meeting, which was held in Chicago, that they would not do anything radical without giving us a hearing, we are pleased to report that no action was taken at the Manitou meeting that was detrimental to our interests.

THEO. LUTH, Chairman.

President Dort: Gentlemen, you have heard the report of the committee on freight and classification. The report did not take very long to read, but I assure you that it has taken some little work to be able to make a report of that kind. I know something of the work that committee has done, and I think the carriage builders, if they got no other benefits outside of that, it is well worth every dollar that it has cost us.

The report was accepted and filed, and the association offered its thanks to Mr. Luth and his committee for their able work in the matter.

President Dort: The next report will be from the committee on abuses in the carriage and accessory trades, by Perrin P. Hunter, of Cincinnati.

Mr. Hunter read the report as follows:

REPORT OF COMMITTEE ON ABUSES IN CARRIAGE AND ACCESSORY TRADES.

Mr. H. C. McLear, Secretary C. B. N. A., Chicago, Ill.

Dear Sir: The past twelve months have not afforded your committee on abuses much scope as sales have been decidedly light, and while no doubt hundreds of dealers have intruded on the carriage manufacturers during this time, there are notably less unfair claims and deductions as a result of quiet and steady treatment.

In times like the past twelve months, it becomes a large part of our work to help many of the dealers, who at best are inclined to overstock on a small capital. In helping such dealers, it's right to settle by notes and divide them in the first place, so that they can be met, but insist on the interest, so that it established a fair business precedent, as most of the dealers get interest at good rates upon such paper as they carry.

Close inquiry and observation prove conclusively that ninety per cent. of the dealers are willing to pay interest, especially when the matter is placed before them fairly on business lines. Many dealers have come to realize that their old time reductions cannot be continued, hence an improvement is felt all along the line. Less dating of bills took place last fall and spring than ever before. An improvement in terms was brought about by members of one association agreeing generally to give but ninety days instead of four months. Already the central and western manufacturers are planning for three per cent. cash

Digitized by Google

discount, displacing five per cent. discount. Ninety day note or three per cent. twenty days should prevail.

We are, however, firm in the belief that much weakness is shown from the office of the carriage manufacturers in not insisting on better settlements and full interest beyond a given period.

The tendency among most builders of cheap and medium grade vehicles is to greatly improve their quality for 1909. The great question is will they reach out to get that extra cost back or will they sell at "the same old price," thereby practically make a sweeping reduction, in the face of a steady market on their raw material, and in the face of the two unprofitable years just back.

Chances are the output for 1909 cannot near equal 1905 or 1906, and cut prices cannot materially increase the sales for 1909. Offers of dating and long time destroy the chances of improvement in our trade conditions so that your committee cannot by any process gradually build up new and better conditions in terms, which if neglected soon grow into abuse and sooner or later will affect us and the accessory trade.

Therefore we recommend each manufacturer from his own office and through his salesmen define definitely what is said and shall be the right selling terms and form of settlement.

The efforts toward the withdrawal of the guarantee are not dead. Space and time prevent placing before your meeting the painstaking efforts that have had the attention of an excellent committee. Since your last meeting, suffice to say, it awakened a widespread interest among the larger jobbers and dealers west of the Mississippi River. It has already brought out many good points and settlements this fall have netted the carriage manufacturers better results.

The Southern vehicle manufacturers have about agreed to eliminate the guarantee.

Some harm is worked against us on account of the catalogue houses spreading broadcast literature that tells the farmers that their vehicles are warranted for two and even three years.

It's up to the carriage manufacturers to stand for their own rights.

We suggest each manufacturer continue to report to his neighbor and spread the information as to what dealers are continuing abuses and by degrees fairness will be the motto of all.

Respectfully submitted,
PERRIN P. HUNTER, Chairman.

On motion the report was received and filed.

President Dort: The next order of business will be the report of the committee on improving the waterways of the country. In the absence of Mr. Rickards, the chairman of the committee, Mr. Ratterman will read the report.

The report was as follows:

REPORT OF COMMITTEE ON IMPROVING THE WATERWAYS OF THE COUNTRY.

To the Carriage Builders' National Association:

Gentlemen: This association observes with great satisfaction the renewal of the agitation for deeper waterways and improved harbor facilities in the United States. Few questions have more vital interest to the business community than that of transportation, and nothing is more important to our trade. If the railroads with all their development are incapable of carrying the freight of the country as has been but recently proven true, then the waterways must be improved and developed so that bulky, non-perishable freight and surplus products may be without unnecessary delay moved from points of production to the consumers' markets. * * *

We respectfully suggest the passage of following or similar resolution: The C. B. N. A. convened in their thirty-sixth anual convention in Chicago, October 11th to 17th, 1908, are,

Resolved, That the question of interior waterway transportation is of so great importance to our industry, that we individually and collectively pledge ourselves to appeal to our representatives in congress of the United States from our individual districts to give this gravely important improvement, to the people at the earliest date for commencement and vigorous pressing of the great work to all reasonable proportions throughout the States.

Respectfully submitted,
Z. TAYLOR RICKARDS, Chairman.

On motion the report was received, placed on file, and a vote of thanks tendered to the committee for its work.

President Dort: Under new business comes the motion made by Mr. Parry yesterday, changing Article 3 of the By-Laws, so that the annual dues of all members of the association shall be ten dollars and that the enrollment fee shall be abolished; that there be no enrollment or initiation fee, but that the annual dues shall be ten dollars. This will include the accessory as well as the active membership.

After much discussion in which Messrs. Hunter, Bannister,



Wilson, Brunsman, McGrath, Ratterman and the secretary took part, the resolution was passed by a unanimous vote.

President Dort: The next business will be the election of officers.

The secretary read the report as published in the proceedings of Wednesday's meeting and on motion the secretary cast the ballot for the election of the officers as read.

The report of the committee on resolutions was read by Mr. Lewis Straus. The first resolution was on the conservation of the forests, and urges the House of Representatives of the United States certainly and speedily to enact this measure into law at the coming session of congress.

The next one urged congress to remove the duty now on imported hides and have the same placed on the free list.

Mr. Straus then read resolutions thanking the retiring president and officers of the association; the carriage trade journals; the exhibitors; the accessory association; the local committees; the technical school and its efficient director, Andrew F. Johnson; the board of trustees of the technical school; the general committee of associations; the invited guests; Secretary McLear and the visiting ladies.

Mr. Lewis Straus: Here is a resolution on good roads which the committee recommends the adoption of:

Resolved, That we favor the enactment by congress of legislation making appropriations for aiding in the improvemet of the public highways, these appropriations to be extended in co-operation with the road officials of the various states.

Mr. Lewis Straus: This is referred back to the association for discussion.

Digitized by Google

There is one also regarding the hickory association.

Resolved, That the C. B. N. A. become an active and self-supporting member of the National Hickory Association.

On motion the report of the committee on resolutions was adopted.

The two resolutions, one on good roads, federal aid to good roads, and the other on the C. B. N. A. becoming a member of the National Hickory Association were referred to the executive committee.

Mr. Hassett: Before that takes place, I would like to make a motion that on this, the occasion of the thirty-sixth annual con-



vention of the C. B. N. A., the secretary be instructed to send to the secretary of the British Coach Builders a copy of these resolutions, that they be spread on the records of the association, and our secretary be instructed to send a copy to the secretary of the British institution. Carried.

President Dort: The next order of business will be the report of the committee on exhibition.

Mr. Bannister: My report cannot be a written one, because I was advised that I was expected to make it at a late hour. I hope, however, that the vital points which I will endeavor to make will get into the record. * * *

I am just going to speak of some of the evils, if you please, of this exhibit proposition, and to ask you carriage makers if it is fair to ask a man to become an exhibitor in your place and require him to put up five dollars as a membership fee, (now ten dollars, for which I am thankful), to pay fifty cents a square foot for the space he is to exhibit upon, and to ask him to transfer, if you please, his office from his place of business to here for three or four days, where he can have access to you as carriage makers, and then for you to deliberately, if not intentionally, or possibly by your actions anyhow, to invite every other accessory man that is on top of the wholè earth to come in here and take advantage of that which these people are paying for. Do you think that is fair? * * *

Mr. Oakes wrote me about membership, and I solicited some of my fellow competitors to become members, and they said to me, "Why should I become a member, I can get all I want without membership." A man told me only yesterday in my place of exhibit, "you have a pretty nice exhibit, Bannister, but it costs too much money; I can see all the people I wish to see without it." Suppose I thought that way, and all the other accessory men thought the same way. Would you have any exhibit? Certainly not. Now this is hardly fair for us who are trying to help the thing along, but these parties I have been referring to who use our exhibits without paying for them are like the vampires upon a good, healthy body, sucking the life blood out. Gentlemen, I thank you. (Applause.)

The Secretary: Now, first of all, we want to get a fair understanding. Let us know what we want. Now the rule heretofore has been to send an invitation to all the carriage men in the United States, because it virtually reaches them all, to come to this convention and examine these exhibits, and he is just as welcome as anybody else.

Mr. Hassett: Sure, the carriage men.

The Secretary: Of course, if a man is an active member of the association and he wants to come in the door, we can't keep him out. I don't know of any rule which you can make that will keep him out of the show. It is just as much a part of the convention as this meeting. If you pass a resolution that no associate member can come in on the exhibits, you shut him out and deprive that member of his rights, and I don't think you can do that. When it comes to keeping out people who are not members, you will have to pass a resolution that they cannot remain on the floor. You can't shut out one of your own members, but he ought to have the decency not to solicit orders on the floor without taking space. He ought to know, and be man enough to know, that that is not the thing to do. I don't think it is right for a man who does not take space to come here and solicit orders. He should do what the others do and take his share. I cannot see how it is possible to shut him out; if he is not man enough to do the right thing. I cannot see how we can stop him. I make this statement simply for what it is worth. If anybody else has a better solution, I will be pleased to know of it.

After further discussion of the subject in which a number participated, Mr. Bannister said: I offer the resolution that the secretary of the C. B. N. A. be instructed at this meeting to adopt such regulations as will prevent accessory men, not members of this organization, from entering the hall during the time of the exhibit. I offer this resolution:

Resolved, That each exhibitor upon the floor be furnished



with a separate badge by the association showing that he is an exhibitor.

The resolutions were unanimously adopted.

Mr. J. E. Firestone read the report of the obituary committee, as follows:

An All Wise Providence has removed from our membership during the past year the following members: Active—Henry C. Staver, Ferdinand L. Graves, E. M. Brannick, John B. Judkins, W. F. Kramer, J W. Renwick. Associate—Henry Zwick, John Dohse. Therefore, be it

Resolved, That in the death of our fellow members the association has sustained a sad loss, which we deeply mourn.

Digitized by Google

That we sympathize with our association, with the families and friends of the deceased.

That although separated from our midst and gone, they are not forgotten. The records of their efforts and labor will always remain with us, and the knidly remembrance of their congeniality and friendship will always be a pleasure. Be it further

Resolved, That a copy of these resolutions become a portion of our permanent records and a properly inscribed report handed to the families of the deceased members.

President Dort: This report will be received and filed.

Mr. Wilson: In moving the acceptance of the report, Mr. President, I don't think we should overlook recording the fact that one of these gentlemen who passed away was a former president of this association, Mr. Henry C. Staver, of this city, a man who for many years was active in this organization, and who did much for its upbuilding, and during his term of office gave a great deal of time and care and attention to many things that are still a part of the work of the organization and which has helped it materially as an organization, and a former member of the executive committee. I move that we convey to the family of the deceased our long appreciation of the ability and character of Mr. Staver and our regret at his passing away.

The resolutions were adopted by a rising vote.

President Dort: The next business in order, the selection of the place for the next meeting.

There were three cities contesting for the honor, Rochester, Atlantic City and Washington.

President Dort: The first city on the list is Rochester. All in favor of Rochester will raise the hand.

(There were sixteen hands raised in favor of Rochester.)

A vote was taken on Atlantic City and five hands were raised.

The vote taken on Washington showed such a large number of hands that they were not counted, and Washington was declared to be the next meeting place. The largest attendance at any business session for many years past was present to assist in declaring the place of the 1909 convention.

The meeting was adjourned sine die.

C. B. N. A. BANQUET.

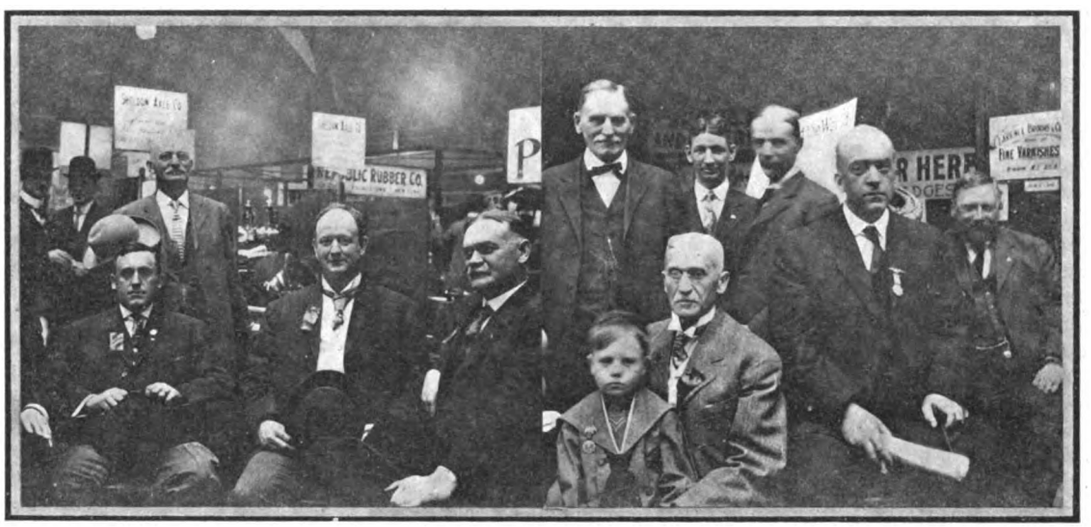
The C. B. N. A. convention for 1908 came to a close with the annual banquet, which was held in the Auditorium banquet hall on Thursday evening. It was a brilliant scene. President Dort presided as toastmaster. The speakers for the occasion were: Hon. Fred. L. Fake, Judge of the Chicago Municipal Court; G. M. Carmen, director of the Lewis Institute, Chicago; Hon. Geo. E. Roberts, president of the Commercial National Bank, Chicago, and Francis W. Shepardson, of the Chicago Tribune.

ASSOCIATE MEMBERS ELECT OFFICERS.

The annual meeting of the Associate Members of the C. B. N. A., was held Thursday afternoon, October 15th, at three o'clock, with President Chas. E. Adams in the chair and Secretary C. H. E. Redding at his desk.

A committee on nominations was appointed, consisting of Mr. Taylor, chairman; Mr. Paff and O. B. Bannister. In the election of officers which followed, John McGrath was chosen president, Louis Strauss, vice-president, Charles W. Cathcart, secretary and O. E. Walker, treasurer. Charles E. Adams was elected executive committeeman to serve on the executive committee of the C. B. N. A. For the executive committee of the associate members the following were chosen: Charles E. Adams, one year; O. B. Bannister, two years; Henry Higgins three years.

Upon motion of John McGrath a resolution was passed recommending that the City of Washington, D. C., be suggested to the C. B. N. A., as the most desirable place to hold the next



C. B. N. A. convention and that the secretary of the C. B. N. A., be instructed to so notify his association.

A resolution was introduced upon motion of O. B. Bannister to the effect that the associate members approve of the suggestion of the C. B. N. A., to increase the annual dues of C. B. N. A. members to ten dollars and eliminate the initiation fee heretofore charged. The motion was carried.

After the report of the financial secretary in which was described the manner of raising entertainment funds for C. B. N. A. conventions, the meeting adjourned sine die.

OPPORTUNITY FOR YOUNG MEN.

The classes of the Technical School for Carriage Draftsmen and Mechanics, now located at the Mechanics' Institute, 20 W. Forty-fourth street, New York City, recently opened with a full membership enrolled in the evening branch of the school. In the day classes, however, there are vacancies which should be filled at once by ambitious young men who are in position to spend the entire day for a few months at the study of carriage drafting. Instructor Johnson gives this class his entire attention on every day during the week (except Saturday) from 9:30 a. m. until 4:30 p. m.

This instruction is given free to all connected with the carriage wagon and automobile trades who fill the requirements for admission, and every progressive young man able to support himself during the course of his studies should avail himself of this opportunity. Mr. Johnson will be pleased to furnish prospectus of the school on application at address given above.

Digitized by Google

C. H. A. T. CONVENTION.

V. D. Ten Broeck, of Springfield, Elected President—A Beef-Steak Dinner Long to be Remembered.

The annual convention of the Carriage, Harness and Accessory Travelers' Association, better known as the C. H. A. T., which was held in the Flemish banquet hall of the Grand Uuion Hotel on Monday evening, Oct. 5th, was largely attended.

The meeting was called to order with President Grant Wright in the chair, who at once proceeded to deliver the annual address. It was an extemporaneous effort and dwelt chiefly on a report of his attendance on the waterways conference and the prosperity congress, the latter under the auspices of the United Commercial Travelers' Protective Association. He struck a blow at combinations in business where they become monopolies. The catalog house also came in for its share of criticism and was declared a serious menance to the traveler.

The board of directors, in its report, chronicled the death of James Murphy of New York City and E. M. Brannick of Portland, Ore.

Secretary Kronfeld's annual report gave an itemized statement of membership and showed the financial condition of the association to be excellent.

The election of officers resulted as follows:

President—V. D. Ten Broeck, Springfield, Mass.

Secretary and Treasurer—L. H. Kronfeld, Mt. Vernon, N. Y.

Vice Presidents—F. J. Johnson, Los Angeles, Cal.; J. H. Wilber, Cripple Creek, Colo.; W. W. Harrall, Fairfield, Conn.; J. P. Cahill, Wilmington, Del.; B. M. Meeks, Washington, D. C.; Elliot Dunn, Atlanta, Ga.; C. W. Flanagan, Chicago, Ill.; M. L. Green, Auburn, Ind.; J. W. Crutcher, Lexington, Ky.; Geo. A. Small, Woodfords, Me.; B. S. Amos, Baltimore; E. E. Crandall, Ashmont, Mass.; H. B. Edwards, Detroit; Geo. W. Hall, St. Paul; N. D. Allen, Kansas City; W. F. Bennett, Manchester, N. H.; C. R. McLain, Englewood, N. J.; A. W. Hoover, Germantown, N. Y.; J. W. Wadsworth, Charlotte, N. C.; J. W. Crider, Cincinnati; S. E. Wright, Philadelphia; T. E. Burt, Providence, R. I.; W. H. Digges, Fort Worth, Tex.; C. A. Quigley, Salt Lake City, Utah; E. J. Pease, White River Jct., Vt.; Max Robinson, Martinsburg, W. Va.; A. Young, Milwaukee; F. Kerr, Montreal, Can.

Board of Directors—C. C. Hayes, Chairman, New York; C. E. Sorin, Cincinnati; W. W. Wood, Philadelphia; J. A. Bent, New York; E. A. McGrew, Philadelphia; P. D. Randall, Springfield, Mass.; C. E. Perkins, New York; H. H. Sickles, Brooklyn; F. H. Gowen, Little Falls, N. Y.; H. E. Copeland, West Newton, Mass.; Grant Wright, Philadelphia.

A beefsteak dinner was given at Reisenweber's, 58th street and Eighth avenue on Thursday evening following, of which about 200 partook.

The guests were each presented with a large apron, towel and stein, all appropriately inscribed, after which they took seats around barrels and any old thing improvised as tables, and then the fun began. Pounds of beefsteak and chops, celery, oysters and such like disappeared like magic. Fingers did the work of forks and teeth of knives. Instrumental music was accentuated by everybody joining in the melody and at midnight the affair broke up with "Auld Lang Syne."

J. M. STUDEBAKER CELEBRATES SEVENTY-FIFTH BIRTHDAY.

J. M. Studebaker, Sr., only survivor of the five brothers who developed the company bearing the family name, on October 10, at his beautiful home, Sunnyside, South Bend, Ind., was assisted in a unique celebration of his seventy-fifth birthday anniversary by many of the "old boys" from his army of 3,500 employes.

Eighty-four of the men who had served twenty-five years or more with the Studebaker company, marched into the great dining hall of the veteran manufacturer's home at a signal and cheered the man who at more than three score and ten is as hale and hearty as one of the most youthful of his employes.

A. L. Peak, who has a record of forty-three years of continuous service at the South Bend factory, was extended the honor of toasting the host. Mr. Peak now is called "chief" by his associates, and has sole charge of the fire fighting apparatus at the factory. Twenty-nine of the guests at the celebration have records of thirty years' service.

Earlier in the day seventy-two foremen, all veteran employes, engaged a band and marched to Sunnyside to serenade Mr. Studebaker.

FIFTEENTH ANNUAL CONVENTION.

National Association of Agricultural Implement and Vehicle Manufacturers Meets in Columbus.

The fifteenth annual convention of the National Association of Agricultural Implement and Vehicle Manufacturers was held at Columbus, Ohio, on Oct. 20, 21 and 22. This being the week following the convention of the C. B. N. A. in Chicago, a large contingent went direct from one convention to the other. This association is composed of the principal manufacturers of agricultural implements and vehicles in this country and has a membership of 300. President Newell Sanders presided.

Hon. R. W. Walton welcomed the manufacturers on behalf of Gov. Harris. Mayor Bond also extended a hearty welcome. W. S. Thomas responded for the association. The first day's session was taken up by listening to the address of the president and reports of the executive committee and secretary and treasurer.

During the Wednesday morning session, Attorney C. E. Moore, legal advisor of the association, addressed the meeting concerning the work of his department during the past year. He stated that he had rendered seventy-two legal opinions on questions presented to him by members of the association.

He spoke of the effort being made by certain states of the union to discriminate against foreign corporations in favor of those corporations manufacturing goods within the states. He told of the litigation that had been precipitated by the association and of the number of cases now pending in which it is interested.

One interesting point of his report was upon the inspection of American manufacturing plants by foreign representatives. He stated that he knew of one big corporation of America that had lost a big foreign contract because of its unsanitary condition.

Other reports were by S. E. Swayne, "Costs;" W. S. Thomas, "Dealers' Associations;" F. C. Johnson, "Foreign Commerce;" J. T. Morrison, "Freight and Passenger Transportation;" H. M. Kinney, "Insurance;" A. J. Brosseau, "Terms and Credits;" W. B. Brinton, "Materials;" L. B. Lourie, "Membership;" E. D. Metcalf, "National Legislation;" Joseph Dain, "Patents;" William H. Taylor, "State Legislation;" H. E. Miles, "Tariff." Addresses were made by Albert Blauvelt, Dr. Charles B. Morrell, T. B. Sellars and others.

At the final session, Thursday, Chicago was selected for next year's gathering, and, following the usual custom, W. B. Brinton, of Dixon, Ill., was advanced from the position of chairman of the executive committee to president of the organization. H. B. Staver, of Chicago, was elected treasurer. H. M. McKinney, Winona, Minn., was selected chairman of the executive committee, and A. J. Brosseau, Albion, Mich.; W. H. Taylor, Peoria, Ill.; and F. R. Todd, Syracuse, N. Y., members of the executive committee. The following vice-presidents were elected: U. G. Orendorf, Canton, O.; F. K. Bull, Racine, Wis.; O. H. Perry, Columbus; T. B. Carson, Davenport, Iowa; J. M. Studebaker, South Bend,, Ind.; E. G. Hobler, Batavia, Ill.; P. A. Myers, Ashland, O.; A. B. Farquhar, York, Pa.; C. B. Dempster, Beatrice, Neb.; F. H. Bateman, Greenloch, N. J.; T. M. Sechler, Moline, Ill., and H. James, Memphis, Tenn.

Digitized by Google

Resolutions adopted advocated the revision of tariff under the minimum-maximum theory; indorse the resources conservation movement of President Roosvelt, pledge the support of the convention to the movement and declare for a special committee to be appointed to carry out the ideas of that movement; indorse the bill now in congress for the creation of a court of patent appeals, but disprove of the extension of terms under which patents are now granted; declare for the passage by state legislatures of effective peddlers' licenses; oppose the parcels post as being inimical to the interests of the retail dealers; asking that the laws of various states be made uniform with relation to interstate commerce, and declare support to the National Association of Manufacturers to this end; that the members of the convention work toward the shortening of terms of which goods are sold and indorsing the appointment of R. R. Dennis as special agent of the department of commerce and favoring the appointment of additional agents in the work being done with respect to foreign implement manufacturing.

Auxiliary Association Organized.

An auxiliary to the National Association of Agricultural Implement and Vehicle Manufacturers was organized at Columbus. The movement was started by representatives of prominent concerns engaged in the manufacture of iron, steel, paint, varnish, lumber, malleables and similar lines. The object of the new organization is to co-operate with the National Association of Agricultural Implement and Vehicle Manufacturers in securing members and liberal attendance at the annual meetings, and to provide suitable entertainment at these meetings.

An organization was effected by the election of the following officers:

Severn P. Ker, Pittsburg, Pa., president.

Charles McGee, Detroit, Mich., first vice-president.

Carl Hertel, Kansas City, Mo., second vice-president.

E. J. Baker, Chicago, secretary and treasurer.

These, with William J. Clyde, George F. Rummel and W. E. Stockton constitute the board of directors.

Several committees were appointed and these will proceed at once with the work outlined by the auxiliary.

TREE PLANTING IN NEW ENGLAND.

Corporations and private citizens throughout New England are beginning to realize the opportunities which this region offers for profitable forest planting. This year about 2,500 acres have been planted in the six New England States by private citizens. In addition, a number of water companies have adopted a forest policy. The largest plantation of this character, which comprises over 1,000 acres, belongs to the Metropolitan Water and Sewerage Board of Clinton, Massachusetts.

One of the most important phases of reforestation in New England is that of planting abandoned farms and other waste land, which at present is bringing no income. In Massachusetts this waste land amounts to ten per cent. of the total area of the State, while the latest reports in Rhode Island show 228 abandoned farms. It is this type of land which is now being planted. Wealthy men here see a good investment, and a number of them have planted tracts of at least 50 acres each this year, with the intention of increasing the size of the plantations annually. One owner in Massachusetts who started a white pine plantation of 63 acres this year, expects to plant 50 acres annually for the next ten years, while others intend to plant tracts of various sizes ranging upwards to 200 acres apiece next spring.

White pine is, of course, the species most generally planted, but other species which make excellent growth and are being used more and more are Norway spruce, for timber and pulpwood; chestnut, for telegraph poles, posts, ties, and lumber; red oak, for piles and ties; black locust, for fence posts, and sugar maple for a variety of products.

It is not only on these tracts of waste land that planting is beginning to play such an important part. The practical farmer in this region now realizes that the cheapest and best way to get the special wood products which he needs on his farm, is by planting the trees. He realizes, too, the protective value of plantations which serve as shelterbelts and windbreaks. Altogether, this region offers excellent opportunities for tree planting.

WAGON BUILT BY JASON CLAPP STILL IN USE.

A wagon built by Jason Clapp and bought by a local Pittsfield, Mass., grocer, nearly fifty years ago, is still being used by that merchant in delivering the necessities of life to his customers. Certainly a wagon that will stand forty-five or more years of service deserves honorable mention at least, especially in these days when so much cheap work is foisted upon the public. This matter has been referred to us by a grand-daughter of Jason Clapp residing in Pittsfield, who was gratified to read about her famous ancestor in our fiftieth anniversary number. Mr. Clapp died, she informs us, in 1868.

The following short reference to this wagon appeared recently in a local Pittsfield newspaper:

"One of the valued assets of the W. H. Cooley store is a delivery wagon made by Jason Clapp some time between 1861 and 1864. It cost $375 and was worth every penny of it. The vehicle is apparently in as good shape as it was on the day it came from the factory. It runs as easily as a buggy and has not acquired the rattles. There is a very expressive phrase that has crept into our language—'it was made to sell.' Jason Clapp's wagons were made to sell, but not to 'sell' the men who bought. They received full value for every dollar invested."

CENSUS OF STANDING TIMBER.

The national conservation commission has caused the first comprehensive attempt at a census of the standing timber in the United States ever undertaken. The forest service has for several years been eager to take such a census, and the bureau of the census has expressed its willingness to co-operate, but funds have never been available. The conservation commission, however, needs information to help complete its inventory of the country's resources, which it will include in its report to the President, and since that report is to be submitted the first of next year, it needs the information at once. In consequence the work on the census has been started with a rush and is now under full headway.

It may be a slight exaggeration to speak of a census of timber, for of course it is impossible to count the individual trees in the forests; even the most ambitious plans of the forest service and the bureau of the census did not contemplate that. But a trained man can with great accuracy "cruise" a tract of forest and estimate the number of board feet it contains. Large portions of the forests of the country, including practically all the national forests, have been estimated at various times, but these figures have never been brought together and no organized effort has ever been made to gather them into one total, nor to supply the deficiencies where hitherto no estimates have been made.

As a result, the guesses as to the amount of standing timber in the United States, range all the way from 822,682 million to 2,000 billion board feet—a difference of more than a trillion feet in the estimates of the best qualified authorities in the country.

In the opinion of the forest service, the most carefully prepared estimates yet made are those by Henry Gannett, published by the twelfth census in 1900. These placed the total stumpage at 1,390 billion board feet. Mr. Gannett, it so happens, has been chosen by the President to compile all the information gathered for the commission, and with his previous acquaintance with the subject of forestry, he is at work now enlarging the knowledge of forest areas at present available.

The importance of this census lies largely in the fact that it will give an accurate basis for computing how long our tim-

Digitized by Google

ber supplies will last. Through the co-operation of the forest service and the census bureau the country's annual consumption of wood is known with tolerable accuracy, although even here there are some discrepancies, because a large amount of wood is used for posts, fuel, and domestic purposes, for which no satisfactory data have yet been collected. But the concensus of opinion among those equipped to judge is that the present annual consumption is about 100 billion board feet, or something more than that. One leading authority has placed it as high as 150 billion board feet.

Assuming a stumpage of 1,400 billion feet, an annual use of 100 billion feet, and neglecting growth in the calculation, the exhaustion of our timber supply is indicated in fourteen years. Assuming the same use and stand, with an annual growth of 40 billion feet, we have a supply for twenty-three years. Assuming an annual use of 150 billion feet, the first supposition becomes nine years, and the second thirteen years. Assuming a stand of 2,000 billion feet, a use of 100 billion feet, and neglecting growth, we have twenty years' supply. Assuming the same conditions, with an annual growth of 40 billion feet, we have thirty-three years' supply. With an annual use of 150 billion feet, these estimates become, respectively, thirteen and eighteen years.

It is apparent from these computations why the national conservation commission considers the census of timber so essential to the preparation of its inventory.

The chief difference between the methods now being employed by the conservation commission and those by the bureau of the census would use are, that while the bureau would send out enumerators to make personal visits to all parts of the country, the commission is aiming at the same results through a tremendous amount of correspondence. For instance, 3,100 letters have gone out to the county clerks, asking for statements of forest areas in their counties. Seven thousand lumbermen and timberland owners have been asked to supply similar information. In all nearly 150,000 letters have been sent. These letters also ask for a wide variety of information beside the area and capacity of forests. They touch upon all phases not only of the lumbering and milling industries but of all others which are even indirectly dependent upon the use of wood. The purpose of the commission is not merely to learn how much wood is growing now, but how long it may be expected to last and how the supply may be prolonged by economy.

All government departments and bureaus which have any information about forests, as well as many large corporations, such as land grant railroads which hold big forest tracts in some states and have cruised them carefully, have turned it over to Mr. Gannett.

The forest service naturally has the largest fund of information, and it is gathering more constantly, either independently or with the help of the census bureau. The departments of war, the interior, and commerce and labor can turn over the amounts of timber standing on military, lighthouse, and other reservations. The bureau of corporations of the department of commerce and labor has sent out an extensive schedule of inquiries to its special agents which, it is hoped, will add to the present information concerning the manufacture of wood. All the states of the Union are co-operating and will furnish statistics concerning state forest lands.

RUBBER TIRES IN CAUCASIAN CITIES.

Consul W. W. Masterson states that the rubber tire sales in the Batum district of Russia amount to about $200,000 annually. The streets of the cities are paved with cobblestones, which necessitates the best tires. Those in use come from Riga and Moscow, and are heavy and tough, lasting with ordinary usage nine months to a year. When they become badly worn they are cut into pieces, strung on strong steel wires, and placed on ordinary public carriages for hire.

CATALOGUES AND PRICES OF AMERICAN CARRIAGES WANTED.

Carriage builders catering to the export trade will kindly favor the writer of the following communication and ourselves, by mailing, as requested, a copy of their catalogue with price list at once.

October 1, 1908.

Dear Sirs—As we often receive inquiries about light American vehicles, we should be greatly obliged to you to be so kind as to have forwarded to us illustrated catalogues for such carriages from such houses in position to supply the export trade, with lowest export prices.

Relying upon your kindness, and thanking you in advance for any favors extended, we are, Yours truly, J. Neveu & Cie., 169 Avenue du Roule, Neuilly on Seine, near Paris, France.

NEW TIRE COMPANY INCORPORATED.

Triumph Automobile Tire Company, capital $1,000,000, was incorporated under the State laws of West Virginia by Henry E. Keyes, C. O. Derr and Henry W. E. Johnson, all of Homestead, Pa,; C. H. O'Harra, Akron, O., and W. P. Stewart, Wheeling, W. Va. The company is located at 40 Zane street, Wheeling, and its purpose is to manufacture and sell automobile tires.

NATAL VEHICLE IMPORTS.

A Decreasing Market Is Reported for Goods of Foreign Manufacture.

Edwin S. Cunningham, Consul at Durban, South Africa, furnishes the following report concerning the present condition of the trade in carriages and wagons in Natal:

There has been so marked a change in this trade within the past few years that American manufacturers may well revise their former opinions in regard to the demand for American vehicles. Some years ago there was a fairly large and steady demand for American carriages and wagons, and the dealers state that the goods imported, as a rule, gave satisfaction to the buyers. There were complaints about the short life of some of the lighter types of carriages on the rough roads in the country districts, but on the whole the American vehicle obtained and retains a good reputation here.

The following incident illustrates the experience of some of the purchasers of American conveyances: A farmer called upon one of the largest dealers recently and asked to be shown some of the carriages of a certain American make which had been stocked by that particular firm years before. He said that he had bought a carriage of this make twenty-five years ago, and as it was becoming rather shabby he would like to buy another.

When such excellent opinions are entertained of the American carriage there must be some strong reason for the decline in demand, because in the ordinary course one might logically expect to find a growing trade. But the following statistics will show that a heavy decrease is occurring: In 1906 the imports of carts and carriages into Natal from the United States amounted to $48,942, and in 1907 to only $19,004. The generally depressed state of trade may be ascribed as the cause of a part of the decline indicated in these statistics, but that does not account for the whole falling off. The first and chief cause of the decline is the high duty upon imports (25 per cent. ad valorem), and this, augmented by the expensive transmission by sea, has acted as an effective stimulus to local manufacturing, with the result that now a large percentage of the vehicles used in the colony are the work of Natal builders.

Several firms in Durban and a greater number in Pietermaritzburg are engaged in turning out a variety of vehicles, which are designed to meet the needs of the country. The articles so manufactured are not as a rule very elaborately finished,

Digitized by Google

and they are certainly heavy, but they are much cheaper than anything that could be imported, and as they do all that is required of them it is not surprising that they are gaining a firm foothold in the local markets. Another matter which plays a large part in the diverting of the carriage and wagon trade to Natal is the fact that the builders are content to produce a vehicle at a price which allows them no profit over and above their day's wage.

When there is a revival of business in the colony, these conditions will no doubt be somewhat altered, but it does not appear that there is any likelihood that the bulk of the trade will be wrested from the local manufacturers, however prosperous the country may become, except of course in the case of expensive carriages, and these when imported are generally bought direct from the manufacturer oversea through a commission house.

APPOINTED SALES MANAGER.

Warren D. Oakes has succeeded George F. Keller as sales manager for the Parry Manufacturing Company, of Indianapolis, Ind., Mr. Keller having resigned to accept a position with the Studebaker Bros. Manufacturing Company, of South Bend, Ind.



Warren D. Oakes.

Mr. Oakes has been identified with the Parry company for eight years, holding important positions through which he has acquired a thorough knowledge of the vehicle business and fitted himself for the duties of sales manager. His success in other capacities has earned the promotion and it goes without saying that he will make good in his new position as he has in the others.

FOR THE EGOTIST TO ABSORB.

The world is not so much concerned as to who you are as to what you are. Solomon says, "I have seen servants upon horses and princes walking as servants upon the earth," and he might have added that the former constituted a much less elevating spectacle often than the latter. Of all the asses in this world the man who is always trying to appear "somebody," is the most hopeless. It is said that the celebrated wit, Sydney Smith, had the habit of going up to self-important looking individuals on the street and asking the question very gravely, "Pray, sir, are you anybody in particular?" One feels like asking the same question of many he meets. You can always tell the upstart from the fuss he occasions wherever he happens to inflict himself. In the railroad coach he rows about the seats and in the Pullman orders the porter about like old boots, and exacts all kinds of attention. At the concert hall and in church he is always suffering from drafts and fusses about the management. The other day one of these self-important individuals was making his presence felt on a street car, when a seedy-looking, red-nosed individual gave the whole car the cue to his antecedents by going up to him and saluting him with "Hello, Billy!" When you find an old fellow who is anxious to impress his possession of blue blood upon his acquaintances or neighbors you can safely put it down that you don't have to go back two generations to find the soap grease cart or the pick. And in nine cases out of ten the cart or the pick were handled by cleaner hands than those that make greater pretensions. If you are worth knowing, people will find it out, and if you are not, no amount of tin horn tooting will help you out.—Canadian Shoe and Leather Trade.

THE DEADLY SETSCREW.

In an editorial note, with an article on accidents and laws and methods regulating compensation therefor, in Everybody's, for October, the opening sentence says that during 1906, in the state of Illinois alone, a hundred men were killed or maimed by one little device called a setscrew. Also, that an investment of 35 cents each, or a total of $35, would have saved those men. Every man who has worked around machinery knows about the setscrew, and particularly about what a dangerous thing it is when it is a part of a set-collar on the end of a shaft. Also, most of those who have served for any length of time around machinery, have either witnessed or heard of instances of men getting their clothes caught by these little setscrews and being injured. This is the first time on record, however, we have ever come across positive figures as to the number of accidents chargeable directly to the setscrew. One hundred, in one state, in one year, means thousands in the course of a year when we consider all the different states. Some of them probably would have been injured anyway, even if the setscrews had not been there, but with figures like these before us it looks like time to either abolish or house in the setscrew. Some of the so-called safety set-collars are probably not much better than the old-style ones, but there are some that are better, and none but the best should be used, and it would probably be better even if they could be housed in.

It has been found possible to cover the nut on a buggy axle simply for the appearance of the thing, and we have seen engine bed bolts and nuts covered with a fancy housing, so why not give a little more attention to properly housing in setscrews and collars in such a manner as to entirely eliminate the danger of their catching and winding up some man in an unguarded moment? Here is a thing that can be done; all we need is to give more attention to it, and the indictment furnished in the opening sentence of the article quoted above should furnish plenty of stimulant to inspire the giving of more attention to this subject.

CONSOLIDATED AND NOW BUILDING PLANT.

The Norman Buggy Co., of Covington, Ga., which recently consolidated with the Elks Buggy Co., of Griffin, Ga., closed a contract for the immediate erection of a plant. This will be of brick, with dimensions 65x210, and two stories high.

EXPECT NEW MANUFACTURING INDUSTRY.

There is a movement on foot to transfer the entire plant of the Bruner Wagon Co., with its backing of responsible business men, from Wapakoneta, O., to Lima, O.

A jealous man cannot be sound of body or of mind.

Digitized by Google

THE TRADE NEWS PUBLISHING CO. OF N. Y.
Publishers of THE HUB

J. H. WRIGHT, *President.* G. A. TANNER, *Secretary and Treasurer.*
24-26 MURRAY STREET, NEW YORK.

JACOB H. KLEIN, *Technical Editor.*

REPRESENTATIVES:
J. HENRY KLUNE. J. G. TANNER. B. H. HULL.

THE HUB is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of TRADE NEWS PUBLISHING CO.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

FRANCE.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

GERMANY.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

ENGLAND.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

The Convention.

The C. B. N. A. convention was one of the most interesting and successful ever held, notwithstanding the noted absence of some well known members from the East and South. There was perhaps less discussion of questions than at some former meetings, but members do not attend these conventions to engage in discussions. The resolutions passed were of the usual practical and sensible sort on public and trade questions. The association represents the intelligence and the progressive spirit of the trade, yet conservative views characterized all the proceedings.

There were no complaints and no spirit of complaining over conditions, but a spirit of confidence was manifested in all that was said and done. In the elections which took place, the best men were chosen. The new president, John Hassett, is a typical carriage builder, earnest and progressive. The convention came far to the eastward for its chief officer, but it could have gone farther and fared worse. Mr. Hassett has the experience, the mental and personal qualifications and the push to make him the peer of any of his predecessors in the office of president.

Membership.

The readiest and most available way for the C. B. N. A. to keep its treasury from an attack of consumption is to get in more members and raise dues. Vigorous efforts have been and are now being made along that line. If the membership does not grow, it is not because of indifference, but to a notion that the times require a broadening of the purposes of the organization with reference to dealing with practical business and commercial conditions. Efforts made years ago in this direction were discouraged. The younger element has within a year or two shown some symptoms of unrest over the conservatism of the old-timers, and a new association was the result.

This is a matter which only experience and conditions arising can determine. It is no easy matter to mix business and fraternity. Besides, the time of members at C. B. N. A. conventions is consumed in the exhibit hall and in social exactions. The publicity incident to the meetings is against any practical consideration of purely business or trade matters. They are best considered behind closed doors—not that secrecy is required, but it is not natural for business men to say all they have to say and want to say concerning trade difficulties in the open.

No Reduction in Prices.

Salesmen of several prominent carriage builders have for months past been informing their principals that there exists a sneaking notion in the minds of carriage dealers that prices for carriage work are likely to be lowered somewhat. This notion has no other foundation than that the general depression has lowered prices in almost all channels, and the dealers do not see why carriages should be an exception.

But there are several reasons why carriages must be an exception. Manufacturers know, if dealers do not, that the cost of all material has slightly advanced. The reduction of one-third output also increases the cost of production per unit. And besides, any possible reduction, were it possible, would be so trifling as to have not an ounce of weight in the stimulation of a demand. The steel rail makers have acted upon this commercial fact.

Dealers are learning that no reduction will be made. The only reductions, when made, will be where quality suffers.

The Spoke Manufacturers.

Preparations are being made for the next meeting of the Spoke Manufacturers' Association of America which is to meet in Nashville, Tenn., December 1st. Interest has rapidly developed in the organization. Earnest effort is being made to have every manufacturer, big and little, present. There is some need of harmony along price lines but special interest is felt in uniform grading, the lack of which has given occasion for conferences.

The industry is a strong and growing one and already much good has been accomplished. Notwithstanding the drawbacks incident to the past year there has been some expansion of capacity, some substitution of modern appliances and some increase of stocks by way of preparation for what most of the membership believes will be a good year in 1909.

A Matter of Sentiment.

The automobile manufacturers ought at least to be thankful to the carriage manufacturers for defraying the cost of a school from which they appear to be deriving more benefit through the skill of its graduates than the carriage builders themselves. The general habit of copying designs of first-class builders renders it unnecessary for many shops and factories to employ a draftsman of originality. If he is draftsman enough to copy, he passes and earns his salary. For some time, however, there has been a feeling of discontent over the leakage of graduates into channels to which it was not designed they should drift. The hog never looks up to see where the acorns fall from, and the automobile manufacturers are not looking up (with their pocketbooks) to see where their graduated draftsmen come from. With the great majority of manufacturers the writing of an annual check for the technical school has been more a matter of senti-

Digitized by Google

ment than a matter of business. They are willing to do their small share in supporting a school which turns out carriage draftsmen, but they might object some day to support a school which turns out automobile draftsmen to build up an industry which will not contribute to its support.

The Associates.

The Associate Members of the C. B. N. A. is a progressive organization, and is doing its full share to make the conventions of the carriage builders a success. The association cordially endorsed the proposition to double the initiation fee. The members represent the best there is in the accessory trade. Their annual meeting with the builders is productive of good feeling and mutual understanding. While the business of the members has largely fallen off, the expression of opinion was practically uniform that the coming year will be one of increasing activity and reviving prosperity.

Next Year's Meeting Place.

The selection of Washington, D. C., as the next place of meeting for the C. B. N. A. will draw a great many who might remain away were a less inviting place selected. It is always attractive and full of sights worth seeing. It is a good many years since the convention met in the Nation's Capital. Though not a manufacturing center, it has advantages as a meeting place which will appeal to everyone, especially to the southern contingent, which is yearly becoming more important.

Freight and Classification.

The committee on freight and classification earned and received the thanks of the C. B. N. A. at the recent convention. It did a whole lot of good work during the past year—a work which every carriage builder thoroughly appreciates. Its chairman especially deserves to be remembered. Important changes have been effected in the classification of heights of crates throughout the country. The committee has its weather eye open and is watching the course of the railway officials who have to do with the fixing of rates and classification.

Not So Bad.

It is satisfactory to carriage builders to be told by the executive committee that the falling off of one-third in the volume of business during the past year was due to the general business depression, for the most part, and not to the invasion of the automobile, according to the views of manufacturers. Dealers, however, do not seem to concur in this view. They attribute fewer sales to the growing preference for the automobile. Both dealers and manufacturers seem to apprehend that four-passenger vehicle work will in the future suffer more severely from the activity of the automobile industry than other forms of vehicles.

There is a reason for this which it is hardly necessary to point out. So far as automobile enterprise has extended among carriage builders, it leans in the direction of light work, though by no means universally. The carriage builders will for a long time have a practical monopoly of light vehicular work. The auto-buggy and runabout is the present menace to that branch, but the cost of such work will act as a protection for years to come to the light carriage builder.

Rectifying Abuses.

Abuses in the trade are on the decline. It required courage to attack them. For years as they grew they were looked upon by builders as unavoidable evils. Competition first planted the seed of abuse, and compulsion drugged the trade as a whole to tolerate it in its varied manifestations. The first fruits of the well-organized opposition to the spread of abuses has been the partial but very encouraging elimination of unfair claims and unfair deductions. In years past those dealers who made it a business of pushing unfair claims found that manufacturers did not seek their business, but they managed to find others who did. The overstocking on small capital has in recent years grown to be a serious matter, and this has been wisely curtailed, to the advantage of both dealer and manufacturer.

When the abuse committee approached the question of asking or demanding interest on accounts, they anticipated a strong opposition. In this they were treated ableness of the proposition could not be and was not to an agreeable surprise. The manufacturers have gained an important point by their unity of action. The reason seriously combatted. It lifts a load from the manufacturers' shoulders. Discounts will probably soon be the rule, reduced from five to three per cent.

None But Exhibitors.

The convention felt it incumbent as a matter of fair dealing to the accessory trades to protect those exhibiting. The exclusion of non-exhibitors is only fair. The cost of exhibiting is not a small one, and if those who go to that expense are not to be protected, what advantage, they might ask, is there in coming. The exhibit hall naturally attracts large numbers of interested parties. Ordinarily a large amount of business is transacted. The success of the exhibition feature is in a sense the success of the C. B. N. A. This feature is growing yearly, and it deserves encouragement.

Dues Raised.

The increase of annual dues from five dollars to ten dollars was rendered necessary by the increasing outlays of the association. It assures the support of the technical school without outside solicitation, and secures ample funds in the treasury. That there should be any loss in membership in consequence of this fair and business-like action does not seem probable. As was pointed out, the direct benefits received through the action of the freight committee alone makes the ten dollars dues a very low price. The association is determined not only to stand by the school, but to increase its efficiency and broaden its scope.

Great Field for Forest Experts.

It will be a slap at the intelligence of many great business associations if the Appalachian-White Mountain bill is not passed at the next session of Congress. It was a disappointment that it was not passed at the last session. It will amount to forest reservation on a large scale, and will afford a field of activity for forest experts to show in a few years what can be accomplished in an area of country which at present is declining in value.

Digitized by Google

CONVENTION OF NATIONAL FEDERATION OF RETAIL IMPLEMENT AND VEHICLE DEALERS.

The ninth annual convention of the National Federation of Retail Implement and Vehicle Dealers' Associations was held at the Lexington hotel, Chicago, October 13, 14 and 15. President C. L. Glasgow, of Nashville, Mich., presided and twenty-four of the leading implement dealers of the country, representing ten of the associations holding membership in the Federation, were present.

The morning of the first day was taken up in listening to the president's address and the secretary's report. The proposed abolition of the warranty on vehicles was discussed, at the end of which it was decided to confer with the Carriage Builders' National Association, which was holding its annual convention in Chicago. A proposition to elect a president for a two-year term was decided inadvisable, but it was suggested that the nominating committee use its discretion as to whether a president should be renominated.

The afternoon session was devoted largely to a discussion of peddlers' license laws. The Federation recognizes the need, from the dealers' point of view, of laws by which the peddling of goods of various kinds may be regulated. It was decided to recommend to the constituent associations the appointment of legislative committees charged with the duty of securing the desired legislation in their respective States. The Federation decided to ask assistance of the National Association of Agricultural Implement and Vehicle Manufacturers in securing the needed legislation on this subject.

Secretary Hodge was instructed to make arrangements for the coming convention session to whatever extent he found it possible, selecting speakers to represent the Federation in States other than their own.

On assembling for the second day's session the Federation took up the subject of conflicting convention dates. A committee which had been appointed for the purpose reported the following schedule for 1909-10:

Nov. 2, 3 and 4.—Tri-State Vehicle and Implement Dealers' Association.

Nov. 9, 10 and 11.—Michigan Retail Implement and Vehicle Dealers' Association.

Nov. 16, 17 and 18.—Nebraska and Western Iowa Retail Implement and Vehicle Dealers' Association.

Nov. 30, Dec. 1 and 2.—Iowa Implement and Vehicle Dealers' Association.

Dec. 7, 8 and 9.—Illinois Retail Implement Dealers' Association.

Dec. 14, 15 and 16.—Wisconsin Retail Implement and Vehicle Dealers' Association.

Dec. 14, 15 and 16.—Retail Implement Dealers' Association of South Dakota, Southwestern Minnesota and Northwestern Iowa.

Jan. 4, 5 and 6.—Minnesota Retail Implement Dealers' Association.

Jan. 11, 12 and 13.—Western Retail Implement and Vehicle Dealers' Association.

Jan. 18, 19 and 20.—Retail Dealers' Hardware and Implement Association of Texas.

Feb. 2, 3 and 4.—North Dakota and Northwestern Minnesota Implement Dealers' Association.

Feb. 9, 10 and 11.—Colorado Retail Implement Dealers' Association.

Second week in July.—Oklahoma Retail Hardware Implement Dealers' Association.

The remainder of the second day's session was devoted to conferences with committees from the National Association of Agricultural Implement and Vehicle Manufacturers, National Plow Association and the Carriage Builders' National Association.

At the conference with the committee from the Carriage Builders National Association the carriage builders were represented by D. M. Parry, J. D. Dort and P. P. Hunter. The Federation asked the manufacturers' committee to recommend to the Carriage Builders' National Association the adoption of an official warranty on vehicles, which would protect the dealer for twelve months from date of sale to purchaser and hold him free from expense in replacing defective parts. A form of warranty embodying the ideas of the dealers had been drawn up and was presented to the manufacturers' committee. In this form the dealer agrees to handle all claims under the warranty in a fair and impartial manner. The purchaser is obligated to make his claim for defects within thirty days after the defect is discovered and deliver to the dealer the parts claimed defective. The dealer is required to deliver all parts on which claims are made before making adjustment, holding the same subject to the order of the manufacturer or jobber, and will render a statement of all warranty charges he may have against a manufacturer or jobber within ten days after date of delivery of vehicle.

Mr. Parry, speaking for the Carriage Builders' National Association, said that the organization was not in a position to take any action with reference to warranties. Its membership consisted of carriage manufacturers of all classes; from the man who builds one or two jobs a year to order to the manufacturer who builds 30,000 vehicles. Many of the members manufacture vehicles exclusively for the consumer and have no business relations with dealers. His attention was called to the fact that the association had adopted a resolution favoring the abolition of the warranty at the Atlanta convention two years ago. He said that action had never been taken seriously and the matter had been dropped. All of the members of the committee stated that the association had no authority to attempt to bind its members to a form of guaranty or to commit them to the abolition of the warranty. It was stated that the Carriage Builders' National Association is largely a social organization, but that Mr. Parry and the other members of his committee would submit the dealers' proposition to their organization before its convention adjourned.

The election of officers took place the third day, and resulted as follows:

President—C. L. Glasgow, Nashville, Mich.

Vice-President—Joseph Baker, El Paso, Ill.

Directors—T. G. Wiles, Cherokee, Kan.; F. R. Sebenthall, Eau Claire, Wis.; P. T. Rathbun, Springfield, O.

CARRIAGE SHOW AT GRAND CENTRAL PALACE.

The fifteenth annual exposition of the National Carriage Dealers' Association was held last month at the Grand Central Palace, New York City. The attendance at the show hardly equalled that of previous years, but the same enthusiasm and interest was shown by both exhibitors and the dealers who attended.

A feature of the exhibition this year, and one that is becoming more closely identified with the carriage trade, was the display of automobiles. There were about twenty to twenty-five machines of various makes on exhibit, ranging in style from the low-priced motor buggy to the large touring car, besides the exhibit of many automobile accessory manufacturers. Several light carriage manufacturers of the West had on exhibition motor buggies of their own make. The automobile people did a large business, some of whom remarked that the carriage show was the most profitable exposition of the year from an automobile selling view-point. The Ford, Rambler, Reo, Brush, Maxwell and Chase exhibits did a good business, and other motorcar exhibits did equally as well. Taking it as a whole, the automobile phase of the exposition was one of its most satisfactory adjuncts. That the show would result, however, in mutual benefit to both the carriage and automobile interests was expected.

Digitized by Google

CONVENTION ITEMS

The rainbow bunch of color schemers and distributors of "the paint that covers the earth," had a pleasant at home during convention week. The receiving committee was composed of A. E. Schafer, J. O. Hasson, W. B. Wise, J. W. Anderson, D. J. Moore and W. J. Sohlinger, and at no time did they miss the opportunity to display the colors of the Sherwin-Williams Co.

George Schubert had his weather eye on anybody that looked like the fellow who wanted work-in-the-white. Mr. S. is the senior member of the Schubert Bros. Gear Co., of Oneida, N. Y., whose exhibit of bodies, seats and gears pleased many of the visiting builders.

The Thompson safety buggy pole played a double part at the C. B. N. A. exhibit. Being a patented two-piece pole with features that appealed to the builders, J. B. Finley, T. G. Betts and F. D. Miller enjoyed nothing better than discussing its merits. This pole is the product of the Ohio Valley Bending Co., Parkersburg, W. Va.

No C. B. N. A. convention would seem complete without a delegation of those free flowing and highly finished artists who by profession proclaim the merits of Standard Varnishes. While the exhibit was made up of panels and spokes, finished a la Standard, they also had something under cover that pleased the ladies and was thought well of by the gentlemen. A. Davis, C. M. Bradley, C. E. Baumheckel, W. W. Sechler and C. Steiger did the honors for the Standard Varnish Works, and embraced every opportunity to point the way to a dependable and lasting finish.

Victor Rubber Co., of Springfield, O., had what might well be termed the most beautifully decorated booth at the show. H. H. Durr and E. H. Miller claimed, however, that it was no more attractive than the Victor proposition on rubber tires to carriage builders.

Among the commodities that enjoy a very satisfactory call from the trade are the seat and cushion springs of the National Spring & Wire Co., of Albion, Mich. Raftery and Reynolds did the team play for the house and presented such an interesting line of talk that all seemed delighted to stop and take notice.

F. C. Randall, of Janesville, Wis., exhibited his several specialties in tire applying machinery. The exhibit attracted more than passing attention, as Mr. Randall had power installed and demonstrated the machines in full operation.

R. J. Flanagan and H. A. Peckham were delegated by the Lowell Cutter Co., of Lowell, Mich., to entertain interested builders in their interesting line of carriage seats and bodies. If interest displayed by the visitors entertained counts for anything, this house certainly won out at the big show.

"One of the best conventions ever held," was the sentiment expressed by many of the exhibitors.

Union Bow Co. and Metropolis Bending Co. enjoyed a combined exhibit. Having a space centrally located, the two houses were able to make a very attractive display of bent wood stock.

Fairfield Rubber Co. displayed their usual line of samples. The heavenly twins, E. W. and Major Harold, played the role of host, and they carried off the honors for entertaining the trade in their homelike quarters.

An elaborate display of carriage trimming made up the exhibit of C. Cowles & Co., of New Haven, Conn. Their line of carriage lamps, toilet cases and automobile trimming specialties is most complete. Messrs. M. S. Bottume and T. M. Ruwet knew just that much about the goods that they could deliver the full story without reference to notes.

"Uzatona" was the slogan of the F. O. Pierce Co. at the C. B. N. A. Their exhibit was in charge of S. T. Clineman and H. E. Smith, two artists who by experience are equipped to discuss every phase of the color question.

West Tire Setters of themselves make an exceedingly interesting and instructive exhibit. Not only did the West Tire Setter Co. display samples of work executed on this wonderful piece of mechanism, but had an added feature this year in the Rochester helve hammer, a power hammer that they are producing and for which some wonderful things are claimed. E. A. Grinnell acted as master of ceremonies, while S. E. Tumarity kept an eye on all possible buyers.

Whether the issue is bolts or tacks, there is no one more capable of discussing either question than C. H. Palmer, the popular representative of the National Screw and Tack Co. and Cleveland Bolt & Mfg. Co., of Cleveland, O. With a host of friends Palmer is always one of the busy bees of convention week.

Philadelphia as usual sent forth a jolly bunch to help make the Chicago convention a real old fashioned meeting.

F. T. Barbour graced the exhibit of the Barbour Mfg. Co., of Anderson, Ind. As head of the house he was equal to the occasion, and many convention visitors heard a practical discourse on seat and cushion springs.

The joy of Bannister wheels was beautifully demonstrated in the exhibit of the Muncie Wheel & Jobbing Co. by the only O. B. Bannister and son. Their story runs smooth, inasmuch as both say, "If you would have the best, it must be a Bannister.'

D. Wilcox Mfg. Co., of Mechanicsburg, Pa., had their star trio, F. E. Wilcox, S. F. Hauck and A. T. Wishart, doing a regular annual turn at Chicago during convention week. As fifth wheel and forging experts, they are a first division lot, and it was interesting to note the way they worked to a full house all week. The bill presented by this company is always classy, and at all times warrants a renewal of contracts.

Fitch Gears—nuf sed. The merit of the line is too well known to require the praise of The Hub scribe. However, L. M. Fitch extended the glad hand, and with his lieutenant, John Herbst, booked orders just as naturally as in former years.

L. E. Stone, the man with the smile, and the soul mate of L. M. Fitch, was on hand ready at all times to meet anybody that looked as if they wanted axles or springs. L. E. is the official shouter for the Liggett Spring & Axle Co.

"Old Reliable" gear woods are popular because the J. A. & D. P. Cooper Co., of Struthers, O., have long since adopted an a la carte system of serving their product to the trade. W. H. Stewart and D. P. Cooper were the men behind the wood in the Cooper display, and what this pair don't know about gear woods is not in the book.

R. M. Cooper and Evan James were on hand to show anyone who doubted it that they were from Missouri. That is, as representatives of the Cooper Carriage Woodwork Co., of St. Louis, they now lay claim to that address.

From coast to coast; yes, and around the whole circuit, extends the reputation of the McKinnon Dash Co., of Buffalo, N. Y. Their exhibit this year consisted of twenty-five styles of their popular line of carriage dashes, all of which held the attention of the visiting builders. The committee in charge of the display was W. A. Notman, J. O. Notman, W. Breckenridge and F. S. Claypoole.

Fred K. Maus, representing the Scully Steel & Iron Co., of Chicago, had something to say on the subject of heavy hardware and other supplies.

A Brewster speed wagon body, finished with the lustrous product of the house of Moller & Schumann, represented the exhibit of this old Brooklyn, N. Y., institution. Frank M. Schumann, F. C. Schaefer and J. Gorham were the delegates appointed to play the Hi-lo game to the limit during convention week.

The exhibit of the Tucker Woodwork Co., of Sidney, O., was more than interesting, as it demonstrated the possibilities of wood bending. The display was not only favorably commented upon, but made an impression that will prove a trade winner. W. C. Horr met those interested and seemed pleased with the results of a week at the show.

Solid and cushion tires and mattings covered the exhibit of the Federal Rubber Co., of Cudahy, Wis. O. S. Tweedy, O.

Digitized by Google

Cook, J. C. Blake, E. Dusold and W. W. Wildman were lined up at the rail greeting the builders from their various territories.

Fernald Mfg. Co. presented their usual line of quick shifters and anti-rattlers. An added feature this year was the Spitzli coupler, which patent the company recently purchased together with entire coupler business of the Spitzli Mfg. Co. The new Spitzli coupler was admired by the trade, and E. M. Selkregg, who was the director of the exhibit, found the days all too short to do full justice to the Fernald line of specialties. G. A. Jewell and R. J. Matthews completed the display.

"Elasticgloss" in all its glory was displayed for the benefit of those who knew its merits as well as those who ought to become more familiar with the product of the C. A. Willey Co., one of the foremost color manufacturing houses for the carriage, auto and car building trade. Grouped about that premier color artist, C. A. Willey, in the company's exhibit, was D. Anderson, R. W. Bowen, J. E. Bowman, C. M. Brooks, W. N. Hackett, E. Holler, F. G. A. Rice, F. L. Salmon, F. C. Surgenty, H. C. Willey, J. B. Hicks and J. D. Sinclair.

What was not visible to the eye in the Wapakoneta Wheel Co. exhibit was apparently no trouble for that famous old wheel expert, Carl D. Fischer, to explain. For a wheel display this was most complete, and C. D. F. wore the smile that indicated orders registered.

Only early comers had an opportunity to see the beautiful electric phaeton which S. R. Bailey & Co. forwarded to Chicago. Col. Bailey had it out to the exhibition hall on Monday and Tuesday, but somebody wanted it real badly on Wednesday, so the Colonel had to walk.

Shafts, seats and other work in the white represented the exhibit of the Sidney Mfg. Co., of Sidney, O. P. P. Dyke met the trade and always had an audience.

Chris. Wesp, although not an exhibitor this year, found a host of friends that were glad to see him in his place among the conventionites. C. W. and the King Spring Co. are very closely allied.

The exhibit of the Akron-Selle Gear Co., of Akron, O., was regular in every respect, inasmuch as the space allotted for the display of their famous platform gears was comfortably filled with the product and the genial head of the company, M. Otis Hower. It is the most natural thing in the world for Mr. Hower to discuss gearology.

Postpone the C. B. N. A. banquet until Friday night and it will help materially in keeping the exhibition intact just one day longer.

Van H. Cartmell and his troupe of vehicle gum-shoe specialists made their usual excellent impression upon convention visitors. When the question is rubber tires, they simply point to the brand "Kelly-Springfield," and in a modest way say, "It's the tire that circles the earth—the one best tire to ride on." The exhibit of the Consolidated Rubber Tire Co. also included the new Kelly-Springfield sectional tires for commercial motor vehicles.

Dann Bros., of New Haven, while not exhibitors, usually have a representative of the family at C. B. N. A. meetings. C. B. Dann circulated among the builders and tried to make his appearance at the function purely social. He is not adverse to supplying the wants of the trade, and as occasion demanded drew forth his little book and tabulated requirements.

F. A. Hastings and Geo. M. Hoffman are the team that pulled for the Republic Rubber Co., of Youngstown, O. While Hastings is an old performer, his team mate worked well—at no time did he falter or hestitate. They were out for the prize and bagged the game.

Aside from their regular line, the Shortsville Wheel Co., of Shortsville, N. Y., exhibited the new Heath hub, which seemed to be the newest idea in wheel construction at the exposition. Messrs C. Heath and J. F. Wilson, both practical wheel men, were sufficiently enthusiastic to hold the attention of everybody that came their way, and that helps some.

H. C. Rosenbluth had charge of the Rose Mfg. Co. exhibit of carriage and auto lamps. This Philadelphia house always has an attractive display, believing that it is necessary to show if you would interest people and make sales.

"Everlasting" axles and springs for both carriage and automobile was an important part of the exhibit of the Sheldon Axle Co., of Wilkesbarre, Pa. A new ball-bearing axle was also featured, and it proved a winner. Vehicle builders have confidence in anything that is stamped Sheldon, and the interest centered around this display not only looked good, but pleased the entertainment committee, which included W. H. Son, R. D. Woodford, J. B. Decker, J. S. Beatty, W. H. Gordon, C. H. Gleason, O. A. Timberlake and C. Hemmler.

The Auburn Motor Buggy Chassis Co., of Auburn, Ind., exhibited a chassis of the type that is at present appealing to carriage builders who are looking into the possibilities of this type of vehicle. W. H. McIntyre, Harry McIntyre and T. W. Buckley were the delegates whose knowledge on the subject was freely disseminated.

Firestone tires—the side wire kind and those of the clincher rim variety—were arrayed for the benefit of the trade in the exhibit of the Firestone Tire & Rubber Co., of Akron, O. Grouped about R. J. Firestone were G. A. Talbot, J. V. Moore, C. H. Harris, E. Campion, A. B. Cleveland, A. R. Rockwell, G. D. Brodfield, Wm. Moore, F. H. Martin and W. L. Esterly, all past masters in the rubber circle.

Wm. Wiese, of the house of Wm. Wiese & Co., of New York, moved in the convention circle again this year. Wiese is in right wherever he goes, and he indicated a desire to see everyone else in right, especially those interested in high grade carriage and automobile linings.

The "Diamond" combination is 7318, and the tip to play it to the limit was quietly passed to every visiting builder that came in contact with the Diamond bookmaker. This number covers a white rubber tire produced by the Diamond Rubber Co., of Akron, O. At any rate, O. J. Woodard, C. H. Smith, E. Anderson, J. Carstairs, H. B. Harmer, C. Simpson and H. L. Cooper always had the number in mind, and booked the bets without interference.

Jim Fetzer missed his old running mate, Andy Kimble, at the Chicago show this year. Kimble had arranged for space in which to display his line of gear woods and shafts, but did not appear. Fetzer exhibited the Herbrand Co. line of specialties, and was on the jump every minute working the glad-to-see-you greeting. Everybody enjoys meeting Jim.

Henry P. Jones, of the house of Phineas Jones & Co., was among those whose pleasing countenances usually brighten C. B. N. A. conventions, but on this occasion did not materialize. The Hub scribe "Kantsamore." You were missed, Henry.

Bow sockets and top hardware was a part of the exhibit of the Cortland Carriage Goods Co., of Cortland, N. Y., but the real display was the annual appearance of A. J. Murray, J. Jennison, A. W. Curtis, M. Ritchie and A. E. Roninger. The trade seemed delighted to meet this galaxy of stars, and the booth is always one of the pleasant spots of convention week.

J. Newman, who occupied the chair of honor in the exhibit of the Stein Double Cushion Tire Co., said that while the "gap" was an important feature in the Stein tire, it was not the only talking point. Rubber properties compounded into this tire are claimed to be second to none. This is a point that the company wishes to bring home to every carriage builder. A. A. Lindgren and F. A. Smith assisted Mr. Newman in meeting the trade.

P. Reilly & Son, of Newark, N. J., exhibited a variety of fancy trimming leather for carriages and automobiles.

And the ladies! What would a C. B. N. A. convention be without them? Is any event successful without them?

It is not an unfamiliar sight to see Gus Schubert in the midst of his work-in-the-white at a C. B. N. A. convention. At Chicago the August Schubert Gear Co., of Oneida, N. Y., exhibited three very attractive jobs which created a lively interest among the visiting builders.

The Bradleys, C. C. and his junior, as usual adorned the exhibit of the C. C. Bradley Co., manufacturers of the celebrated "Bradley" and "None Such" shaft couplers. In C. B. N. A. procedure the Bradleys are regulars, and they consider it a pleasure to mingle with their many friends in the trade. C. C. Chamberlain also performed at the Bradley station.

A large variety of roller chafe irons and a disposition to place their output for the coming year, occupied the attention of the Spitzli Mfg. Co. throughout convention week. At the company's stand was G. H. Spitzli and J. K. Light, a pair as smooth as the product they were pushing.

William Harland & Son, manufacturers of the famous Harland's English varnishes, are to be congratulated in having such

Digitized by Google

a popular and hustling representative at the C. B. N. A. meeting this year as H. Hagger. Mr. Hagger has drawn about himself a host of friends, and as American manager of this sterling institution will never permit their colors to be anywhere but at the top of the halyard. Fellows of the Hagger type make successful conventions.

The big G. in rubber tires is the B. F. Goodrich Co., of Akron, O. As usual, the appointments of their space at the C. B. N. A. show were exquisite, possessing that particularly Goodrich touch of quality. B. M. Lovell and A. B. Colbert were the delegates to make the trade feel at home in the Goodrich quarters.

For the real noise in the pole and shaft game, one need venture no further than the exhibit of the Pioneer Pole & Shaft Co., of Piqua, O. Their display is always a gem, and then there are the added attractions—W. A. Snyder, A. R. Freeman and C. O. Whitney.

Cleveland-Canton springs and Cleveland axles have worked in double harness so long that it would hardly seem right to call the display of the Cleveland-Canton Spring Co. and the Cleveland Axle Mfg. Co. a combined exhibit. The home office of both is at Canton, O., and back of the goods was G. A. Loughlin, H. C. Haight and O. J. Strayer. A feature of interest in the exhibit was a new auto-buggy axle.

A. W. Caney is again in the game. Doing business under the style of Batavia Rubber Co. he talked auto tires and inner tubes just as naturally as he handled the solid tire question in the days gone by.

The Hub scribe was asked the meaning of the E in the circle which adorned the lapel of the representatives of the Eberhard Mfg. Co. As W. P. Champney was not in the booth at that moment, and fearing that the party seeking information would not be made to realize the importance attached to the emblem, the Hub man ventured that it represented the "Eternal, Everlasting, Eberhard Hustlers." That the circle represented the globe and that the E was an evidence that Eberhard was everywhere. The lack of exhibit space would not permit of the old time Eberhard display. W. P. Champney and his lieutenants invited their many friends to a real hardware feast at the Eberhard quarters in the Auditorium.

For wheels and woodstock Crane & McMahon certainly demonstrated their ability to fill every requirement at home and abroad. This famous New York house has a reputation that covers every part of the globe where vehicles are used. To appreciate the completeness of their product, a C. & M. catalogue would possibly surprise you.

While "Flint" is the trade mark of the Flint Varnish Works, of Flint, Mich., it also carries with it a general idea of the wearing properties of the free flowing, lustrous article they prepare for the trade. A. M. Allen welcomed all to their cozy quarters, and is about as smooth as the "Flint" finish.

The most successful of roller bearing axles is the celebrated Timken, that has been tried and filled every requirement. There is never a doubt about a Timken; it's there forty ways. If any body doubted the number, F. A. Lester, who occupied the center of the Timken Roller Bearing Axle Co.'s exhibit, was ready to deliver the full story at any hour of the day. Lester discusses Timken axles like an old campaigner, and nothing pleased him more than an audience around the Timken booth.

John C. Meyer, of silk thread fame, did not put in an appearance this year. His goods were on display, and spools of the useful commodity were distributed among the visitors.

Campbell & Dann Mfg. Co., of Tullohoma, Tenn., exhibited its regular line of bent wood stock. J. L. Dann was on hand as chief demonstrator.

Carriage and auto lamps occupied the attention of J. B. Brown and C. R. Dillman in the booth of the J. W. Brown Mfg. Co., of Columbus, O. The display merited more than passing notice.

D. E. Clapp felt at home among the convention visitors. As president of the E. D. Clapp Mfg. Co. and a convention regular, he looks upon C. B. N. A. meetings as a good place to mingle with the trade.

Rogers and Prince were the stars who took the platform for the Fabrikoid Co., and in many brilliant ways presented the principles of their famous leather substitute to an interested assemblage.

Goodyear Tire & Rubber Co., of Akron, O., was represented in every department of tire making at the convention this year. If numbers help, they certainly had enough representation to fill the order bag.

One of the real busy displays at the C. B. N. A. meeting was that of the Metal Stamping Co., of New York. This house has such a varied line of goods that there is always something with which to interest every vehicle builder. J. G. Galvin, the genial head of this institution, is a popular favorite, and the line—well, it's a crackajack. W. R. Noyes and J. W. Wagencraft assisted in meeting the trade.

J. A. Buchanan was at the post of honor and beamed upon the trade, pointing the way to success by the adoption of tubular steel whiffletrees. As the head of the Pittsburg Tubular Steel Whiffletree Co. he had a most convincing argument, and had a big following.

Imperial wheels was the exhibit of the Flint, Mich., company bearing the name. These wheels did not differ much, if any, from other wheels, but the representatives who met the trade thought they were just a little better than any other make they knew of.

Many carriage builders, old personal friends of C. F. Kimball, expressed regret at his enforced absence from the convention.

N. J. Baxter made his annual sojourn at the convention. Under the standards of the Carriage Woodstock Co. he booked orders and imparted information to those interested in the commodity.

Frank Hopewell, senior member of the house of L. C. Chase & Co., Boston, Mass., had contemplated the pleasure of greeting the trade at their always attractive booth, but was unfortunately detained and did not find it possible to make Chicago. Representatives R. R. Bishop, Jr., and L. H. Hubbell, however, are a seasoned pair in convention work and never missed an opportunity to deliver a most convincing argument in favor of Chase products.

The Wayne Wheel Co., of Newark, N. Y., exhibited an interesting line of the Jessup patent wheels, and, while we missed the old veteran from the display, his son was at all times wide awake and no opportunity to discuss wheels got by him.

A forging and fifth wheel exhibit that attracted both builders and buyers was the display of the Keystone Forging Co., of Northumberland, Pa. Several new things in fifth wheels and an improved Bailey body loop were the magnets that drew. The live wires on the inside were Isaac Cornwell and J. D. Weekes.

The Kokomo tribe of warriors camped at Chicago during convention week. While big chief Kokomo, with big stick in hand, delivered his annual message to the waiting multitude his warriors circulated among the throng disseminating the story of that wonderful medicine, "Kokomo" tires, a pure (rubber) product abounding in virtue and overflowing in quality. The wigwam had many visitors, and the tribe report big doings for the week. Ellis and Spraker are big stickers, with records that speak volumes of their prowess and victories on the war path.

Cately & Ettling's top prop springs and levers were demonstrated as usual by Mrs. A. M. Ettling and son.

Mulholland springs, shafts couplers and work in the white are familiar to conventionites. The display this year included a driving wagon on new type of buggy springs. R. I. and O. B. Mulholland were the demonstrators who knew the line from A to Z.

S. E. Wright, of the house of Geo. Tiel & Co., of Philadelphia, is popular with the trade who love to mingle at C. B. N. A. functions. His long association with this house enables him to discuss every phase of carriage and auto linings.

It matters not whether it be January or July, the season is always spring with F. P. D'Arcy, the Demosthenes of the cushion and seat spring profession. From Kalamazoo F. P. comes forth at convention time primed for a hard campaign. When this silver tongued orator delves down into the well of knowledge and pours forth the practical side of the cushion spring proposition, his listeners admit that he knows whereof he speaks. D'Arcy Spring Co.'s exhibit would not be the same without the only F. P. D'Arcy on the platform.

George R. Carter, of Connersville, Ind., manufactures an exceedingly interesting line of carriage leather specialties, which attracted the attention of many at the show this year. Carter is one of those fellows that believes in rock bottom principles, and any who missed his exhibit can address him as above for further information.

Digitized by Google

Under the command of J. F. McBride a company of seasoned convention workers held forth at the C. B. N. A. exposition. Knowing the sterling qualities of the product of Edward Smith & Co., they were prepared to extend a warm welcome to the visiting vehicle builders. From the expression of the faces of those assembled in the company's booth, the Smith representatives certainly looked as if they were in right.

Peters & Herron Dash Co. had not only a fine dash display at Chicago, but arrayed in their space was also C. M. Peters, M. W. Herron, J. D. Kilmer and Max McGaughy, all dash men of experience. Four of a kind looks good in any hand.

Excelsior Seat Co., of Columbus, O., exhibited an interesting line of seats and bodies in the white.

Behind the exhibit of the American Wood Block Co., of Delphos, O., was G. A. Sawyer and H. B. Gillette, both experts on the subject of compressed hubs and their influence on the life of wheels. The "Gillette" wheel, which has as a foundation compressed hubs, was a part of the exhibit. The company would be glad to tell you about this wheel if you failed to meet their representatives at the show.

Crandal, Stone & Co. and the Cortland Forging Co. doubled on space at the Chicago show. The space being limited and the lines large, these two representative vehicle hardware houses of the Empire State had to content themselves with greeting their many friends in the trade and discussing the line from catalogues and illustrations. Appearing for Crandal, Stone & Co. were C. E. Tichener, B. M. Stannard and J. M. Bryant, and this trio took special pains to lay before the visiting builders a new steel reach the C., S. & Co. are producing. F. L. Tichener and C. R. Allen did the heavy turn for the Cortland Forging Co. W. D. Gordon and O. Heinrichsdorp played the trade for both houses.

A full line of carbon goods, buckrams and oil cloth was exhibited by Landers Bros., of Toledo and Boston. R. A. Landers, W. V. Day and H. H. Christopher discussed trim shop supplies to all who came their way.

The pressed steel products of the Sparks-Withington Co. are as well known to the vehicle builders as any commodity before the trade. Hub bands and flanges won fame for this institution, and they hope to attain equal prominence through their later production, ball-bearing bushings for use in changing ordinary wheels to the ball-bearing wheels. Wm. Sparks, as usual, had charge of this exhibit.

Mott Wheel Works, of Utica, N. Y., exhibited a line of carriage and automobile specialties. The feature of the exhibit was a new auto-buggy axle, the latest production of the house. O. W. Mott worked the full time on the line, and seemed pleased with the result of his week's effort.

Any time Hartford Rubber Works Co., of Hartford, Conn., is not centrally located at C. B. N. A. conventions it is not because they do not prefer to be in the spot light. As H. E. Smith, W. R. Reid and G. R. Nobles say: Hartford tires will stand light, as they have withstood the road test, and merit the closer association of personal inspection. The exhibit of this house is always favored with a most satisfactory number of convention visitors, and this year was in every way a repetition of previous displays.

A. T. A. Nelson Co., of Cincinnati, O., exhibited a popular line of carriage straps.

C. E. Adams and his band of vehicle hardwood shouters looked to be a pretty good exhibit of hardware, especially when the whole company was assembled in the space allotted to the Cleveland Hardware Co., of Cleveland, O. It takes space to show up a line of goods such as is manufactured by this progressive institution, but when C. E. Adams can't make a satisfactory display he just entertains at the hall and invites the interested builders to headquarters.

King Fifth Wheel Co., of Philadelphia, exhibited their celebrated line of plain and roller-bearing circles at Chicago. With A. O. Chase on the stump it goes without saying that their interests were conserved by this brilliant performer.

Higgin Mfg. Co., manufacturers of carriage trimming hardware and other specialties, were at the old stand in the convention hall extolling the merits of the line. Both Henry Higgins and his lieutenant, McCroskey, are veterans in the supply line, and either can help any builder with live suggestions for improving any job.

E. F. Rogers & Co., of Philadelphia, Pa., exhibited an interesting line of carriage and automobile trimming specialties. E. F. Rogers was there in person to meet the many friends of the house. This company are the eastern agents for Jewel specialties.

Buggy-about motors were exhibited by the Speed Changing Pulley Co., of Anderson, Ind.

H. C. Nelson, the popular representative of the Jewel Mfg. Co., of Chicago, had a busy time of it meeting the many dealers and supply men that seemed interested in their line of specialties. Among the articles prepared for the trade by this house is cleaning compounds, moth destroyers and top dressings. All these specialties have won recognition and are popular favorites in every trim shop.

Fred L. Merkel, of Chicago, exhibited his patented pole attachment. It is an up-to-date practical devise that interested many at the show.

After years of experimenting and thought, Worrest, of Standarde Ball Axle fame, has at last perfected his invention, which is to-day on the market for consumption. This axle was exhibited by the Automatic Axle Co., of Lancaster, Pa., and was one of the biggest attractions at the show. If you missed it, write for circular and illustrations.

Enterprise Brass Co. and Monarch Carriage Goods Co., of Cincinnati, O., presented as usual a combined exhibit at Chicago. As these two lines work together, the combined display attracts universal attention.

The "Areameter" in full operation interested both leather men and carriage builders. "So simple and yet how accurate," was the way people spoke of it. This is not an airship, but a practical devise for measuring hides.

NATIONAL MANUFACTURERS' ASSOCIATION AND THE TARIFF.

The report of the tariff committee of the National Manufacturers' Association was purposely held back until after election for the reason that the association is a business association and therefore not disposed to have its strictly business attitude upon the tariff subject to cheap political play in the last throes of a campaign. The report of the committee is practically summarized in the following resolutions which concluded the report:

Resolved, We emphasize the importance of maintaining the principle of protection to American interest, of farm, factory and labor.

Resolved, We recommend to congress the creation of a permanent semi-judicial tariff commission or board of experts which shall investigate thoroughly and scientifically all matters pertaining to the subject, to the end that congress and the executive may be fully informed; and shall assist the state department, when desired, in the formulation and negotiation of treaties of reciprocity.

Resolved, We recommend as a basis of protective duties, upon which the commission shall work, the principle of international costs, to wit: Protective duties should represent "substantially the permanent differential between the cost of production in foreign countries and that in the United States." This principle to be applied with an ample margin for safety as against contingencies.

Resolved, That the work of the association in the furtherance of the foregoing resolutions be continued substantially as heretofore.

Respectfully submitted,
H. E. MILES, Chairman.

TRI-STATE VEHICLE SHOW.

The Tri-State Vehicle and Implement Dealers' Association will hold its convention and exhibit at Cincinnati, November 9-14th. The programme is expected to be the strongest and most interesting in the association's history. The business sessions will be held in the Armory building, Cincinnati, November 10th, 11th and 12th. The exhibit opens on the 9th and closes on the 14th.

Digitized by Google

CARRIAGE MANUFACTURERS' ASSOCIATION MEETING.

There was a large attendance and much interest manifested in the meeting of the Carriage Manufacturers 'Association of America, which was held at the Auditorium in Chicago on Thursday, October 15, at 1:30 p. m.

The transaction of the usual routine business was followed by a general discussion regarding complaints of dealers relating to the practice of carriage makers having displays at fairs and selling display goods, or samples, to customers, to avoid re-crating and shipping back to factories. It was generally agreed that this is inimical to the best interests of legitimate dealers and should be discontinued.

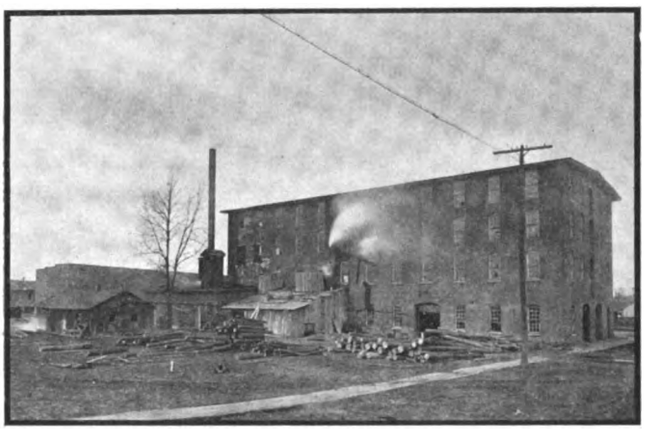
It was the consensus of opinion that conditions are such as to warrant very little, if any, change in the selling prices of finished vehicles during 1909 as compared with those of 1908. It was also the sentiment of those present that financial conditions are not favorable to long terms. Many expressed themselves as not willing to make terms longer than ninety days, with a thirty-day discount period, and April 1st dating on shipments during early spring months.

There were many present who had not heretofore been affiliated with the organization. All were enthusiastic as to the work done by the association and its future welfare.

To secure harmonious adjustments of all questions, general abuses and evils complained of by both dealer and manufacturer is the principal aim of the association.

THE AMERICAN WOOD BLOCK COMPANY.

The American Wood Block Co., who recently purchased the plant of the Ohio Wheel Co., at Delphos, Ohio, devote their efforts to the manufacture of hubs, elm hub blocks—compressed and otherwise—and dimension wood stock. They have also just lately installed the most improved machinery for the manufacture of elm hoops, etc. This action was taken that they could



Plant of the American Wood Block Company.

work all of the soft elm or timber that was not right for hubs into other products, thus insuring best quality of timber in their blocks, which they ship to most of the countries of Europe.

Their hub leader is the "Ideal," which was exhibited at Chicago convention. They also had on display there the complete wheel built from this hub, demonstrating the actual appearance, strength and ease of construction of a wheel built along the lines they advocate.

This firm has one of the largest sheds for the storage of blocks in the country and they keep their stock of dry blocks of the larger sizes up to the limit at all times. The "Ideal" hub has been tested for five years to prove the merits of construction, before manufacturing it for the trade.

The "Ideal" hub has been tested for five years to prove the merits of construction, before manufacturing it for the trade.

VICTIM OF A PECULIAR ACCIDENT.

A peculiar accident occurred to Herman Kress, president of the Kress Bros.' Carriage Company, of Lawrence, Mass., last month.

Mr. Kress was hauling a newly painted wagon from the sidewalk in front of the shop into the street, when suddenly the pole which he had hold of slipped from its socket and he was thrown backward just as a heavy coal team was passing. He fell beneath the wheels of the loaded wagon and the rear wheel passed over his chest.

Assistance was near at hand and he was tenderly carried into his office and physicians, who upon their arrival found the victim in a precarious condition, had him removed to the hospital. There a close examination revealed that his chest was injured and several ribs were fractured. His recovery is looked for.

FORTUNE STAKED ON FUTURE OF THE CARRIAGE.

According to a report appearing in a prominent New York daily, Dan S. Dryer, a dealer who is well known in the horse and carriage trade, has staked a fortune on the future of the carriage horse and the horse-drawn carriage. Taking advantage of the low prices brought about by the panic and the invasion of the automobile, he has been a steady buyer of second-hand pleasure vehicles in the auctions in the last eighteen months, and now has two large buildings filled with broughams, cabriolets, phaetons, surreys, station rockaways, runabouts and other standard carriages. It is estimated that his holdings aggregate close to one thousand vehicles, largely the high grade work of such builders as Healey & Co., the Brewsters, Hooker, Flandrau, Demarest and Studebaker. The cost of these carriages when new was probably not far from $750,000, and in a good market they would bring at least $350,000. Signs are not wanting that the tremendous liquidation and resulting low prices of the last year or two in horse and carriage lines are nearing an end, and as comparatively little new work of the higher grades has been turned out by the builders since the slump set in a turn in the tide would mean a market the like of which was never seen for Mr. Dryer to distribute his immense stock. Meanwhile he is finding a good outlet in the South and West, and seems assured of a profit no matter which way the cat jumps.

FOREST FIRES AND FLOODS.

Losses amounting to many millions of dollars have been caused by forest fires in Minnesota, Wisconsin and Michigan; some small towns have been effaced and a number of people killed. The fires raged so long and were so extensive that the smoke was visible hundreds of miles from the scenes of disaster, appearing as a haze that obscured the sun, and caused it to glow like a red disk at setting. This visual effect is similar to that caused by the ashes blown from the Island of Krakatoa in 1883, which caused red sunsets to show all over the world. These fires have at this writing been almost wholly subdued. Since they started, fires have broken out in Pennsylvania, New York and Maine, causing great loss and much alarm, owing to the drouth which has parched large areas. Hundreds of men under government direction fight these fires.

NEW PARTS FURNISHED.

The Customer—When I bought a car from you a few weeks ago you said you would be willing to supply a new part if I broke anything.

The Motor Agent—Certainly, sir. What can I have the pleasure of providing you with?

The Customer—I want a pair of new ankles, a floating rib, a left eye, three yards of cuticle, a box of assorted finger-nails, four molars, two bicuspids and a funny-bone.—From Sketch.

Digitized by Google

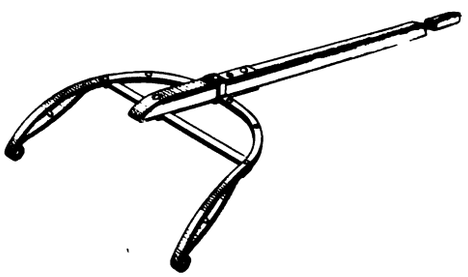
Recently Granted Carriage Patents

Space will not permit us to illustrate all new patents pertaining to the vehicle industry issued by the Patent Office. We therefore select those that we consider of the greatest interest to our readers.

Buggy Tongue. Thomas R. Broyles, of Marshfield, Mo. No. 897,582. Patented Sept. 1, 1908.

This invention relates to a buggy tongue and more especially to the manner of bracing the tongue and securing the same to a vehicle.

One of the claims is: The combination with a tongue, a metal strip passing over and under the rear portion of the tongue and secured thereto, said strip having an offset portion above the tongue and one beneath the tongue, the second men-

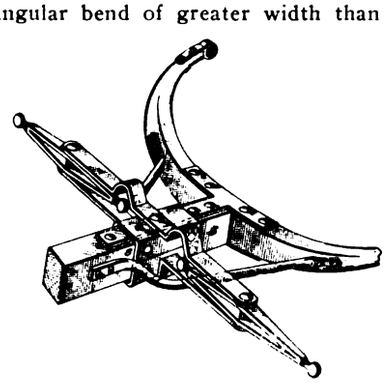


tioned portion being to the rear of the first, and a U-shape member having its bow portion up-set to pass over the tongue and beneath the first mentioned offset, said U-shape member being bent back upon itself and carried transversely across the bow portion forming a brace passing beneath the tongue and through the second mentioned offset portion of the strip, and then bent back to its remaining free end.

Whiffletree. Albert O. Heimsness, of Fillmore, N. Dakota. No. 897,740. Patented Sept. 1, 1908.

The object of the present invention is to improve the construction of whiffletrees for carriages and various other vehicles, and to increase the strength and durability of the same and to arrange the singletrees in the plane of the pole to afford a straight draft pull, and prevent the singletrees and doubletree from twisting on their pivot bolts under the strain incident to a heavy load.

The lower member of the doubletree is provided with a depending rectangular bend of greater width than the pole, and



the side portions of the bend are vertical and are arranged to engage the sides of the sections of the sleeve of the pole to limit the swing of the doubletree. By this construction the swing of the doubletree is limited without employing stay straps, or other devices for this purpose.

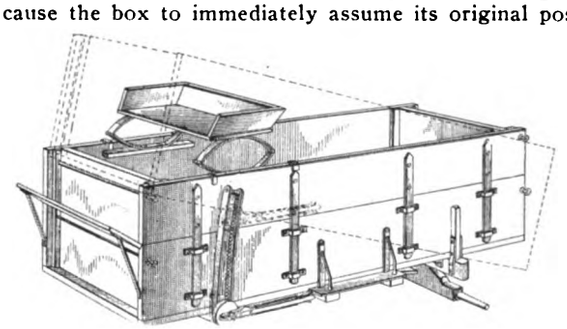
The singletrees, which are truss-shaped, are composed of upper and lower bowed bars or members, converging from the centers to the ends and having their terminals welded together and forming trace-engaging heads.

The upper bar or member of the doubletree is provided at opposite sides of the pole with upwardly extending arched portions to enable the inner traces to be readily hitched to and disconnected from the singletrees.

Dumping Wagon. Charles H. Van Dusen, of Verona, Ill. No. 898,533. Patented Sept. 1, 1908.

This invention relates to improvements in dumping wagons, and has for its object the production of a device by means of which a wagon body may be elevated to a dumping position and at the same time locked against displacement. When it is desired to dump the wagon, the lever being in place as shown in diagram, the lever is worked up and down, the dog sliding over the teeth on the upstroke and engaging the teeth on the downstroke. The dog also being in engagement with the teeth, the downstroke revolves the axle, causing the shaft and pinion to mount upwardly in the rack, thus elevating the wagon box. This operation is continued until the box is elevated to the desired angle.

After the load has been dumped, in order to lower the wagon to its original position, a tripping lever is brought into engagement with the side of the stop, thereby releasing the dog from engagement with the teeth. The bell crank lever is pressed toward the handle of the lever, thereby throwing the dog out of engagement with the teeth. The weight of the wagon will then cause the box to immediately assume its original position.



If no other attachment were used, the box would descend quite rapidly, with a consequent danger of breaking. At the same time that the bell crank lever is operated, it is pressed toward the handle, thereby throwing the band brake into engagement with the outer face of the ratchet wheel. Thus the speed with which the wagon box returns to its original position is entirely under the control of the operator through the medium of the band brake.

Brake for Carriages. Max Ehlert, of Hanover, Germany. No. 898,566. Patented Sept. 15, 1908.

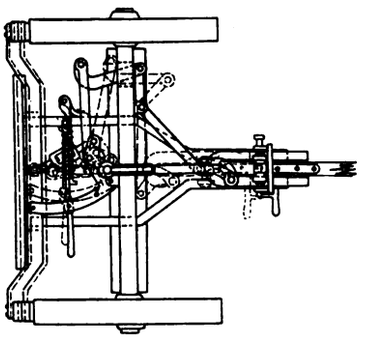
The object of this invention relates to brakes for carriages operating selfactingly during a drive on inclined roads or when stopping the horses.

The brake is worked by means of springs. Its selfacting operation is caused by the backward or forward sliding of the carriage pole in its fastening thill. The pressure of the spring operating the brake is adjustably arranged. The brake-blocks are mounted, if disengaged, by a special device so far from the carriage wheels that they can not wear out on one side by the rotation of the wheels.

If the sliding carriage is pressed backward by means of the backward motion of the carriage pole caused by the pulling back of the horses, the single parts of the brake mechanism adopt the position shown in the figure by dotted lines. The spiral spring

Digitized by Google

acts on the free arm of angle lever whereby the beam with its brake blocks is pressed against the circumference of the carriage wheels by the other arm of said lever corresponding to the force of the spring. If the horses pull the carriage pole again forward the sliding carriage again slides into its foremost position shown in the drawing in full lines. The force of the spring is overcome and the brake returns with its brake blocks to its original position by means of the motion of the lever. In order to enlarge this releasing movement the rod is not directly connected with the lever but there is arranged between said parts an angle lever rotating on a pivot. The one arm of the lever is connected to the rod, the other arm to a slitted rail. The rail is

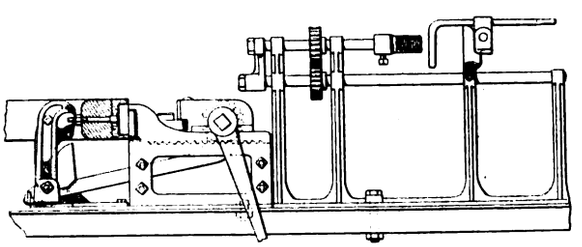


turnably connected by means of the intermediate link to the sliding carriage. The free arm of the lever carries a button having a flattened neck which is guided in the slit of the rail. The button can turn in an enlargement at the end of the slit, thus using the mouth of the slit as support.

Wheelwright Machine. Arthur H. Wilson, of Loogootee, Ill., assignor of one-half to Disken Pryor, of same place. No. 898,811. Patented Sept. 15, 1908.

This invention has for its object an improved wheelwright machine which will be efficient in operation and durable in construction, and which will combine in the one machine practically all the various appliances necessary for a wheelwright in removing and bolting on tires and otherwise repairing wheels.

A further object of the invention is an improved apparatus of this character embodying a nut removing and applying mechanism, also a bolt cutting and extracting mechanism so mounted upon the supporting bed or bench that it may be swung to one side so as to permit the wheel carrying spindle to be slipped up close to the nut removing or applying device, thereby rendering



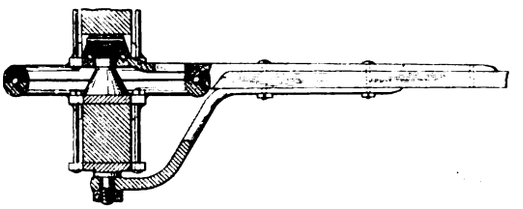
the entire apparatus susceptible to use with small wheels as well as large wheels.

It is also provided with an improved construction of bolt extracting claw so arranged as to render easy the extraction of the bolt and reduce the manual labor or exertion necessary for this part of the operation, the bolt being withdrawn with a straight draw. A further object is a claw which is so mounted as to render it capable of use in channeled tires as well as flat tires.

Fifth Wheel. William H. Divers, of Aurora, Mo., assignor of one-half to W. Robert Owen, of Springfield, Mo. No. 899,660. Patented Sept. 29, 1908.

This invention relates to improvements in fifth wheels for buggies and other vehicles. Its object is to provide a ball-bearing fifth wheel which will be simple and comparatively inexpensive in construction and strong and durable in use.

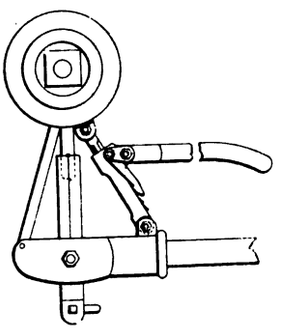
One of the claims is in a fifth wheel, the combination of upper and lower annular members reinforced by cross pieces and formed in their opposing faces with centrally arranged annular race-ways, the upper member being formed in its lower face with annular grooves on opposite sides of its raceway and the lower member being formed in its upper face with annular ribs



adapted to project into the grooves in the upper member, the cross bar of the upper member being formed with a concentric opening and in its upper face with an annular raceway concentric with said opening, a king bolt carried by the cross bar of the lower member and projecting through the opening in the cross bar of the upper member, a nut upon the threaded upper end of the king bolt and formed in its bottom face with a concentric annular raceway, bearing balls in the raceways of said nut and the cross bar of the upper member and bearing balls in raceways in the opposing faces of the annular portions of said members.

Spoke Extractor. Louis P. Parent, of Waterbury, Conn., assignor of one-half to Peter R. Larocque, of same place. No. 899,701. Patented Sept. 29, 1908.

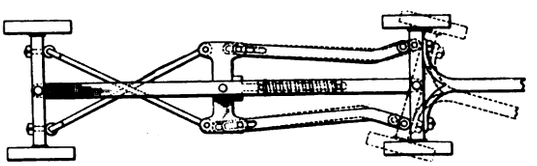
This invention relates to an improvement in spoke extractors and particularly to the extractor for which patent No. 879,308



was granted on February 18, 1908. The spoke extractor shown in this patent comprises a head, an operating handle therefor, carriers swiveled in opposite sides of the head, a slide mounted in said carriers, and a fulcrum brace pivoted to the lower end of the head, the jaws being adapted to grip the spoke, the fulcrum bearing against the hub and so that when the head was turned by its operating handle the spoke would be extracted. In some cases these spokes are very firmly seated in the hub and great power is required to remove them. The object of this invention is to combine an auxiliary lever with a head by which its upper end may be forced away from the hub and hence greater power exerted to remove the spoke.

Running Gear for Vehicles. Victor Zdziarski, of New York, N. Y. No. 899,780. Patented Sept. 29, 1908.

This invention relates to the running gear of vehicles, and the



object thereof is to provide an improvement in this class of devices by means of which a vehicle may be easily guided, and quickly and easily turned in less space than is usually necessary; a further object being to provide a running gear of this class

Digitized by Google

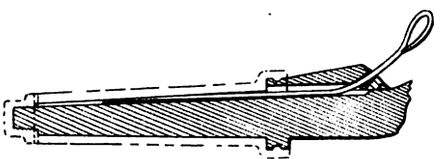
which may be applied to ordinary wagon trucks and to the trucks of light cars.

One of the claims is in a running gear for vehicles comprising front and rear axles, a coupling bar pivotally connected with said axles, a cross head pivoted to the central bottom portion of the coupling bar, link bars pivoted to the opposite end portions of said cross head and crossed beneath said coupling bar and pivoted to the opposite end portions of the rear axle, other bars pivoted to the opposite end portions of the front axle and the rear end portions of which are provided with slots, and pivot pins passed through the opposite end portions of said cross head and through said slots.

Axle Lubricator. Joseph Aden, of Greensboro, N. C. No. 900,252. Patented Oct. 6, 1908.

This invention has for its object an improved construction of vehicle axle, whereby a tool used to clean out the lubricating passages or channel in the axle spindle, may be directed readily into the same from the inner end of the spindle, and without the necessity of removing the wheel.

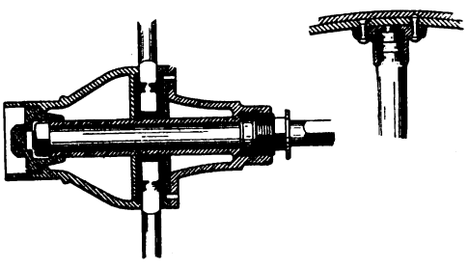
In carrying out this invention, a longitudinal groove is formed in the upper surface of the axle proper just back of the collar which forms the shoulder. The said groove is extended through the collar and registers with the channel. Then a metallic tapered block is taken with a longitudinal groove in its lower face



and a threaded socket communicating with said groove and opening upwardly at a slight angle to the horizontal in the beveled face which extends at right angles to the socket as shown. This block is placed upon the axle proper just back of the said collar, one end of the cap abutting against said collar, and the groove and a socket coinciding with the groove in the axle. The block is then secured rigidly to the axle preferably by brazing or welding, and it will then cover the groove and form therewith a longitudinal bore which will accurately guide a cleaning rod into the oil channel in the spindle.

Vehicle Wheel. Herman Cramer, of Sonora, Cal. No. 900,264. Patented Oct. 6, 1908.

This invention relates to wheels for vehicles and its object is to produce a wheel which when completed shall be practically



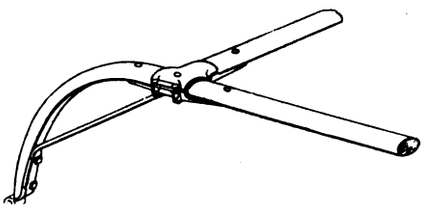
integral, by which is meant that it shall be as firm and rigid as if formed in a single piece. This result is secured even when employing wooden spokes which are preferred. The inventor claims that a wheel when properly made and set up true, will remain true for an indefinite period of time, because if made according to this invention is not subject to the various causes of deterioration which shorten the lives of wheels as ordinarily constructed; such as the warping and loosening effect of changes of temperature, dry and wet weather, etc. These loosening effects are well known and ordinarily apply to the whole wheel, from the connection of the spokes to the hub, through the attachment of the spokes to the felly, to the union of the tire to the latter; and hence this invention by keeping all these connections firm and rigid pertains to the entire construction of the wheel, and its advantages apply to every part of the same.

Our illustrations show a longitudinal section of a hub and a section at the joint between a spoke and the felly.

One of the claims is: In a vehicle wheel, a hub comprising two separate hollow boxes, one of which is provided with a sleeve forming the axle bearing, said boxes being spaced apart to receive the spokes between them, a mass of hardened molten metal in the space between the boxes, and a nut engaging with said sleeve and bearing against the other box, whereby the said boxes are clamped on the spokes.

Vehicle Shaft or Thill. George A. Lambert, of Anderson, Ind. No. 900,288. Patented Oct. 6, 1908.

The main object of this invention is to produce a pair of shafts or thills at a very low cost by utilizing short sections of wood



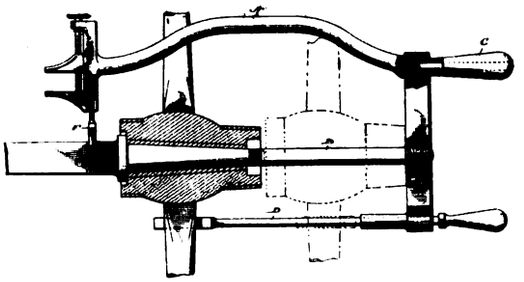
and so connecting said sections as to form a very rigid and durable structure, the thills being preferably constructed in two sections connected together and to the cross bar by means of clamping plates, the clamping plates being so constructed that the bolts connecting said plates will not pass through the wood sections of the thills or through the cross bar, the object of this being to avoid weakening the wood sections by bolting near the joints.

One of the claims is in a vehicle thill formed of two sections and a cross-bar, the end of the cross-bar lying between the adjoining ends of the thill sections, said thill sections and cross-bar being formed with heads at their ends, a pair of clamping plates, one of said plates being on the upper side of the thill sections and the other being on the lower side thereof, said plates bridging the joints between said sections and the cross-bar and having flanges bearing against the shoulders of the heads on the thills and cross-bar, and fastening devices whereby said thill sections and the cross-bar will be secured in position between said clamping plates.

Combined Vehicle Jack and Wrench. Doctrine Clark Lassiter, of Shelmerdine, N. C. No. 900,556. Patented Oct. 6, 1908.

This invention relates to improvements in combined vehicle jacks and wrenches and particularly to that class of jacks which support the wheel when it is removed from the spindle, in order that the lubricant may be placed on the spindle, the object of this invention being to provide a simple, cheap and convenient device for facilitating the handling of the wheels of a vehicle while lubricating the spindles thereof.

To use this device the wrench member is applied to the nut which holds the hub on the spindle, and said nut is unscrewed; the goose-neck A is then passed between the spokes of the wheel



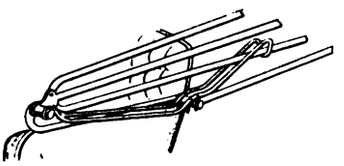
and the end of the rod B is fitted onto the spindle forming a continuation thereof; the forked foot F is then allowed to rest on the top of the axle and by raising bowed arm by means of handle C the wheel is lifted from the ground; the grab rod D is then slid inwardly until the head can be engaged with one of the

Digitized by Google

spokes of the wheel; it is then slid to the right and carries the wheel with it the hub sliding along the rod B to the position indicated by the dotted lines; the wheel can then be lowered to the ground forming a support for the axle; the spindle of which can now be readily supplied with grease or other lubricant; when this has been accomplished, the wheel is slid back off rod B onto its spindle again and the entire device removed, and the wrench member again used to screw the hub nut on.

Buggy Top Brace. John E. Disheroon, of Mena, Ark. No. 901,079. Patented Oct. 13, 1908.

This invention has relation to buggy props, and consists in a double or single spring-rod, one end of which is provided with an eye that fits around the wrist of the shifting-rod of the buggy



seat, the other end provided with a socket in which the back-bow of the buggy top rests, while the spring about its middle rests on the prop.

This spring-arm consists of a double-rod, the front ends of which are provided with eyes. The forward ends of the spring-arm then extend slightly downwardly, and about its middle is bent upwardly and then downwardly, forming bows. These bows are each provided with a saddle, the under face of which is flat and smooth, and exactly conforms to the circumference of the prop.

The props are usually covered with leather, or some light material, and the saddes are thus made smooth and to fit the props, so that neither the prop nor the material that covers it may be readily worn away. This double spring-arm is provided at its rear end with a socket.

RECENTLY EXPIRED PATENTS OF INTEREST TO THE TRADE.

Patents Expired August 11, 1908.

457,346—Horse Detacher. J. H. Garner, Kingwood, W. Va.
457,367—Carriage Axle. C. H. Palmer, Jr., Amesbury, Mass.
457,388—Vehicle Running Gear. A. Warenskjold and J. G. Burgess, San Diego, Cal.
457,422—Neck Yoke. J. G. Burbridge, Dubuque, Ia.
457,511—Sand Band for Vehicle Wheels. S. J. Gelusha, Starkville, New York.

Patents Expired August 18, 1908.

457,815—Hub Attaching Device. T. C. Hargrave, Minneapolis, Minn.
457,853—Dumping Wagon. R. F. King, Bozeman, Mont.
457,883—Jump Seat Vehicle. C. H. Stratton, Buffalo, N. Y.
457,900—Whiffletree Hook. Wm. H. Gibbs, Mendon, Ill.
458,021—Road Cart. G. W. Freeman, Lansing, Mich.
458,056—Hollow Axle. J. James, Rock Vale, Colo.

Patents Expired August 25, 1908.

458,159—Wheel Guard for Vehicles. H. F. Ganon, Peoria, Ill.
458,276—Machine for Turning Spoke Tenons. J. M. Sherman, Brushton, N. Y.
458,280—Wagon Brake. J. B. Garrett, Pittsburg, Tex.
458,356—Vehicle Shafts. C. B. Beebe, Racine, Wis.
458,395—Brace for Vehicle Bodies. A. Hoeffler, and F. L. G. Chapman, Stevens Point, Wis.
458,454—Whiffletree. J. Gutzler and P. J. Gutzler, Kenyon, Kan.

Patents Expired Sept. 1, 1908.

458,597—Vehicle Spring. W. T. Sample, Greenville, Pa.
458,633—Wagon Brake. J. A. Martin, Talley Cavey, Pa.
458,685—Axle Making Machine. Wm. L. Morris, Cleveland, Ohio.
458,728—Vehicle Pole. F. L. Sattley, Springfield, Ill.
458,777—Vehicle Seat. G. W. Peters, Lancaster, Ohio.
458,791—Spring Vehicle. L. Miller, Mexico, N. Y.
458,865—Vehicle. B. F. Tucker, La Porte, Ind.

Patents Expired Sept. 8, 1908.

459,026—Draft Equalizer. E. H. Tank, Holstein, Iowa.
459,074—Thill Coupling. J. Deitrich, Acasto, Mo.
459,130—Hub. W. H. Barlow, Longwood, Fla.
459,157—Running Gear for Vehicles. T. G. Mandt, Stoughton, Wis.
459,194—Wagon End Gate. J. J. Marco, Harlan, Iowa.
459,272—Vehicle Brake. J. F. Dugan, St. Louis, Mo.
459,356—Wagon Tongue. W. H. Benford, Dublin, Mo.

Patents Expired Sept. 15, 1908.

459,495—Road Cart. B. Kern, Jr., Toledo, Ohio.
459,710—Thill Coupling. Wm. J. Patterson, Beaver Falls, Pa.
459,731—Wagon Tongue Support. T. H. Ink, St. Helena, Cal.

Patents Expired Sept. 22, 1908.

459,842.—Adjustable Axle Nut. T. E. Sigle, Buyerstown, and A. B. Wegner, West Earl, Pa.
459,862—Canopy Top for Vehicles. G. E. Wood, Terre Haute, Ind.
459,911—Whiffletree. C. F. Huhlein, Louisville, Ky.
459,956—Combined Shaft Support and Anti-Rattler. C. Bishop, Cleveland, Ohio.
459,964—Thill Support. J. N. Kindred, New Concord, Ky.
459,991—Wagon Shackle. F. Brown, New York, N. Y.
460,041—Thill Coupling. M. T. Smith, Northport, N. Y.

Patents Expired Sept. 29, 1908.

460,107—Fifth Wheel. G. G. F. Boswell, Indianapolis, Ind.
460,174—Thill Retainer for Vehicles. J. Barr, Carroll, Md.
460,258—Dumping Wagon. F. Winter, Baltimore, Md.
460,356—Whiffletree Attachment for Vehicles. I. N. West, Bloomington, Ill.
460,381—Running Gear for Vehicles. J. W. Paterson, Madisonville, Ky.
460,434—Axle Gear. H. F. Feus, Savannah, Ga.
460,495—Fifth Wheel. J. W. Anderson and S. B. Cox, Lancaster, Pa.

Patents Expired October 6, 1908.

460,564—Vehicle Brake. N. Cunningham, Sutton, W. Va.
460,681—Vehicle Wheel. J. B. Lott, Kittanning, Pa.
460,755—Whiffletree Hook. A. B. Neiman, York, Pa.
460,760—Lifting Jack. A. P. Routt, Richmond, Va.
460,833—Axle Lubricator. J. A. Scarborough, Silver Creek, Miss.

The foregoing list of patents of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City.

RECENTLY GRANTED PATENTS OF INTEREST TO THE CARRIAGE INDUSTRY.

894,603—Device for Preventing Horse Motion in Carts. W. N. Cleveland, Dover, Ky.
894,379—Rein Holder. E. R. Fuller, Salkum, Wash.
894,431—Shock Absorber for Vehicles. E. A. and C. A. Garvey, St. Louis, Mo.
894,493—Pneumatic Cushion for Vehicles. E. A. and C. A. Garvey, St. Louis, Mo.
894,776—Vehicle Wheel. G. H. Gruss, Goldfield, Nev.
894,324—Wagon Tongue Support. H. P. Huddleston, Bisbee, Ariz.
894,325—Horse Releaser. G. W. Hurst, Hawthorne, Nev.
894,276—Vehicle Wheel. H. M. Martin, Columbus, Ohio.
894,336—Adjustable Wagon Rack. G. B. Mills, assignor of one-half to J. W. Brown, Nappanee, Ind.
894,526—Spring Wheel. H. Neubert, Chicago, Ill.
894,544—Vehicle. G. Simon, Indianapolis, Ind.
894,242—Vehicle Spindle. T. T. Thompson, Bogota, Tex.
894,562—Hay Wagon Brake. O. Wooten, Pacific, Mo.
894,940—Ball Bearing for Vehicle Wheels. L. Burg, Dallas City, Ill.
895,344—Wagon Rack Standard. L. P. Cook, Clarendon, N. Y.
895,348—Wheel. J. G. Disher, Tothills Creek, South Australia.
895,368—Running Gear. W. M. Hargrove, Prospect, Tenn.
895,185—Tongue Support. N. Kessler, St. Michaels, Minn.
894,980—Running Gear for Vehicles. G. M. Phillips, St. Louis, Mo.
895,301—Tire. A. G. Ritchie, San Jacinto, Cal.
895,042—Wagon Seat. N. P. Rogers, Jefferson, Pa.
895,304—Buggy Box. J. C. Roth, Lowell, Mich.
895,111—Vehicle Wheel. N. Schenk, St. Louis, Mo.
895,127—Vehicle Wheel. G. G. Trannoy, Charenton, France.
894,867—Attachment for Vehicle Tongues. C. D. Williams, Elmore, Minn.
894,930—Spoke Tightener. J. L. Zane, assignor of one-half to J. W. Hunt, Pulaski, Iowa.
895,941—Vehicle Wheel. L. H. Barry, Durango, Mex.
895,537—Supporting Plate for Vehicle Bodies. B. W. and F. M. Burdett, Simpsonville, S. C.
895,984—Pneumatic Hub. J. Duchan, Elizabethport, N. J., and R. and J. Duchan, Vienna, Austria-Hungary.
895,551—Vehicle Cleaning Device. E. P. Gaylord, Rochester, N. Y.
895,554—Vehicle Wheel. A. Graff, Wellington, Kan.
895,452—Tire. E. T. Greenfield, Kiamesha, N. Y.
895,632—Collapsible Foot Rest for Vehicles. C. J. Harris, Bridgeport, Conn.
895,751—Garment Rack for Vehicles. C. J. Harris, assignor to Locomobile Company of America, Bridgeport, Conn.
895,858—Hub. C. Heath, Shortsville, N. Y.
895,561—Vehicle Wheel. J. B. Hembree, Piedmont, S. C.
895,859—Automatic Brake for Vehicle Wheels. O. L. Herod, Dunkard, Pa.
895,567—Axle Lubricator. F. L. Husted, Hicksville, Ohio.
896,030—Singletree. A. E. Levins, Vernon, British Columbia, Can.
895,802—Vehicle Wheel. A. Schultz, South Bethlehem, Pa.
896,927—Doubletree and Line Holder. W. A. Williams, Lexington, Okla.
896,508—Tire Upsetter, Punch and Shear Machine. J. F. Badger, St. Louis, Mo.
896,362—Resilient Wheel. S. S. Childs, Bernardsville, N. J.
896,629—Wheel for Vehicles. J. De Vere, Blackburn, and J. Whitehead, Clitheroe, England.
896,278—Removable Vehicle Seat. J. M. Dixon and J. F. Barwick, Ayden, N. C.
896,104—Guard or Fender for Vehicles. C. W. M. Guhle, assignor of one-third to F. J. Ritter, Philadelphia, Pa.
896,105—Spring Wagon Bolster. J. L. and A. Hagel, Providence, Minn.
896,391—Wagon Brake. G. H. Kanke, St. Louis, Mo.
896,404—Dumping Wagon. W. O. Long, Mansfield, Ohio.
896,137—Seat for Wagons. P. J. Luthardt, Seymour, Wis.
896,317—Clamp for Spacing the Bows of Vehicle Tops Apart. F. L. Paxson, assignor to P. L. Neel, Philadelphia, Pa.
896,661—Tire. W. Porter, Los Angeles, Cal.
896,579—Wheelwright's Machine. J. R. Richmond, Lewisburg, Ky.
896,580—Mud Guard. R. E. Robeson and F. F. Schauweker, Cleveland, Ohio.
896,329—Buggy Attachment. G. Rose and M. Hawley, Bourbon, Ind.
896,703—Vehicle Lamp. C. Bergner, assignor to C. T. Ham Manufacturing Company, Rochester, N. Y.
896,897—Vehicle Wheel. H. Cramer, San Francisco, Cal.
896,724—End Gate Fastener. J. H. Halder, Laurens, Iowa.
896,910—Wagon Brake. W. P. Heath and J. H. Story, Menlo, Ga.
896,992—Shafts for Vehicles. F. S. Howells, Port Washington, N. Y.
897,143—Compound Vehicle Axle. S. H. Preston, New Castle, Pa.

Digitized by Google

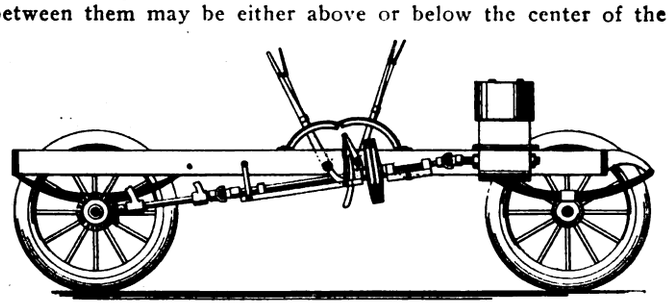
896,735—Sheet Metal Spoke Socket. F. S. Loockerman, Upper Fairmount, Md.
896,863—Canopy Top for Vehicles. J. E. Smith, Atlanta, Ga.
897,701—Detachable Rim for Vehicle Wheel Tires. E. A. Baker, assignor to Rapid Removable Rim Company, New York, N. Y.
897,444—Means for Securing Wheels on Axles. D. Ballif, Biel, Switzerland.
897,450—Short Turn Gear. R. H. Bowman, Canon City, Colo.
897,582—Buggy Tongue. T. R. Broyles, Marshfield, Mo.
897,270—Running Gear for Vehicles. W. H. Chapin, Springfield, Mass.
897,740—Whiffletree. A. O. Helmsness, Fillmore, N. D.
897,630—Detachable Rim. R. Kronenberg, Ohligs, Germany.
897,748—Anti-Rattling Device. A. S. Newton, Providence, R. I.
39,488—Design, Vehicle Body. R. Huff, assignor to Packard Motor Car Company, Detroit, Mich.
897,957—Tongue Support for Vehicles. N. F. Bennett, Sunderland, Ontario, Can.
898,402—Elastic Vehicle Tire. W. Brameld, assignor of one-tenth to J. T. Jordan, Paterson, N. J.
898,036—Vehicle Shaft. L. Burg, Dallas City, Ill.
897,880—Wheel Tire. J. S. Cushing, Norwood, Mass.
897,881—Elastic Wheel. A. Dauvergne, Lyon, France.
898,344—Cart. W. Earnest, Garyville, La.
898,204—Dump Cart. F. C. Feller, Cleveland, Ohio.
897,991—Spoke Puller. W. C. McCoy, assignor of one-half to L. P. Kern, Great Bend, Kan.
898,057—Wheel. J. W. Meixell, Lewisburg, Pa.
898,130—Thill Detacher. J. D. O'Brien, Phoenixville, Pa.
898,082—Brake for Vehicles. W. Wolfe, Patton, Pa.
898,622—Spoke Machine. W. J. Adkins, Little Sandy, Ky.
898,436—Vehicle Wheel. H. Clifford, New London, Conn., assignor to R. Clifford, Monson, Mass.
898,555—Body Hanger for Vehicles. I. Cornwell, Northumberland, Pa.
898,837—Vehicle Bow Socket. J. C. Coss, Cleveland, Ohio.
898,566—Brake for Carriages. M. Ehlert, Hanover, Germany.
898,871—Dump Wagon. C. E. Glenn, Evans City, Pa.
899,011—Dump Wagon. J. W. Haywood, Baldwinsville, N. Y.
898,743—Sleigh Runner for Vehicles. S. J. Jennings, Tremont, N. Y.
898,904—Vehicle Brake. G. Londress, Grafton, W. Va.
898,588—Vehicle Axle. W. G. Meyer, Logansville, Wis.
898,608—Vehicle Wheel. C. Seewald, Williamsport, Pa.
898,533—Dumping Wagon. C. H. Van Dusen, Verona, Ill.
898,712—Pneumatic Vehicle Spring. T. G. Wilkinson, South Williamsport, Pa.
898,811—Wheelwright Machine. A. H. Wilson, assignor of one-half to D. Pryor, Loogootee, Ill.

Copies of above patents may be obtained for fifteen cents each by addressing John A. Saul, solicitor of patents, Fendall Building, Washington, D. C.

IMPROVED TRANSMISSION GEAR.

One of the several features of this invention is to so couple the driving and driven members that considerable variations may be made in the speed or power desired, and in which the direction of movement is readily reversed between the driving and driven members. It further contemplates several constructural details whereby the general efficiency of the transmission gear is greatly improved. The illustraion herewith is a side elevation, partly in section, of an automobile provided with this important transmission gear.

As will be observed, the disks may, by movements of the hand lever, be displaced to such an extent that the point of contact between them may be either above or below the center of the



shaft; when the point of contact between the disks is below the center of the shaft, the direction of movement of the disk is reversed. When the point of contact, or rather when the point of mean pressure between the disks, coincides exactly with the center of rotation of the disk, little or no motion is conferred.

The operator might cause the disk to turn in the one direction or in the other by merely manipulating the hand lever. Of course, as an independent proposition, he can regulate pressure between the disks by means of the other hand lever, and in this way can bring about any degree of lost motion between the disks. It follows, therefore, that he can attain any desired degree of firmness of coupling, ranging from a positive direct movement to a mere drag capable of conferring—for a given load—an almost unappreciable degree of movement.

INTERNAL COMMERCE MOVEMENT.

Leading internal commerce movements for September, 1908, indicate an improvement in the business situation of the country from the depression prevailing during the earlier part of the year. The return to more normal conditions is shown to some extent by the increased activity in the coal and iron trades, though production and traffic figures in these fields are still considerably below the corresponding 1907 record. The improvement in the traffic situation is due chiefly to the heavier movements of cotton and grain, particularly wheat, figures of the live-stock movements showing but slight increases.

Pig iron production for the 30 days of the month, 1,418,998 gross tons, shows the largest monthly production for the year, though falling about 35 per cent. short of the September, 1907, figures. The production figures for the nine months of the year, 10,755,573 gross tons, were about 46 per cent. below corresponding 1907 figures.

Reports from 34 car service associations and demurrage bureaus, covering practically the entire territory of the United States, indicate a further improvement in the car situation, the total for September, 2,690,226 cars handled, being about one-quarter of a million cars larger than for the preceding month, though still over 138,000 cars short of the September, 1907, record. The number of surplus cars reported by the American Railway Association, under date of October 14, was 115,036, showing a considerable improvement since the 16th and 30th of September, for which dates 173,587 and 133,792 idle cars were reported. The most notable improvement occurs under the head of box and coal cars. For the first time during the year considerable shortages of cars are reported, though chiefly on Canadian lines.

REMARKABLE AUTOMOBILE POWER PLANT.

Patents have been granted for a removable power plant, something entirely new in automobile construction. The removable power plant gives accessibility to the motor and all working parts, which can be more readily cleaned and repaired than a non-removable engine. In this case the engine is composed of double opposed cylinders, having a five and one-half inch bore with a five inch stroke. The cam is of chrome nickel steel, as is the shaft, while the cams and shafts are integral.

The engine is located on a sub-frame on the front of the car and is placed on a movable track. By loosening four connections and removing two bolts the engine may be completely detached and removed from the car in less than fifteen minutes.

A simple arrangement, yet so original that it has been covered by patents, is a folding carrier attached to a removable engine tray, so that when the engine is drawn forward the legs of this carrier drop down, being of sufficient height to maintain the same engine level as its position in the car.

The carrier legs are equipped with rolls which enable the operator to haul the whole power plant any place he may desire. But one man is required for this operation. The sub-frame which supports the engine also contains the transmission and all parts of the engine and transmission control. The engine is covered by a short metal hood, hinged to the base of the radiator, and when it is raised the entire engine is exposed and all parts accessible.

THE STRATFIELD.

As Bridgeport, Conn., can now boast of a first-class hotel, the merchants and manufacturers of that city wish all who make that town to know about it and enjoy the environment of a hotel equipped with every convenience for the comfort and entertainment of guests. The Stratfield is one of the largest and most up-to-date hotels between New York and Boston.

Digitized by Google

OBITUARY

James W. Renwick.

James W. Renwick, who for years conducted a carriage salesroom in Manhattan Borough, New York City, died on October 8 at his home in same borough, of a complication of diseases.

Mr. Renwick was in the fifty-ninth year of his age, and was born in Manhattan. He leaves a widow and three daughters.

Fred. Van de Water.

Frederick Van de Water, president of the Wisconsin Carriage Company, of Janesville, Wis., and for eleven years grand secretary for Wisconsin of the United Commercial Travelers, died on October 11 after an extended illness caused by a stroke of paralysis. Mr. Van de Water was born in Whitewater, Wis., in 1859, and moved to Janesville in 1886.

J. H. Adsitt.

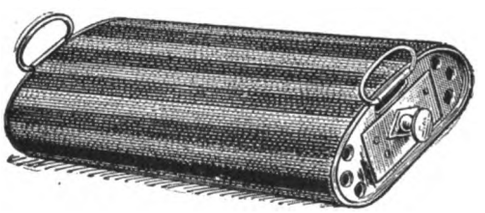
J. H. Adsitt, of Franklin, Ky., for many years one of the leading carriage makers of western Kentucky, died October 24.

Marcus L. De Voursney.

Marcus L. De Voursney, senior member of the firm of De Voursney Brothers, lamp manufacturers of New York City, died November 4th, in Newark, N. J., of heart disease, complicated by stomach trouble. He was born in Pequannock, N. J., seventy-seven years ago. Mr. De Voursney was a member of the Newark Common Council for ten years and served as Fire Commissioner in that city. He was formerly president of St. Luke's Methodist Episcopal Church. A widow, two sisters and a brother survive him.

STAR BRAND FOOT WARMERS.

The chilling winds of November always reminds the rider in pleasure vehicles that nothing would add so materially to his comfort as a foot warmer. On foot warmers or carriage heaters the house of Lehman Bros., of New York, are famous. They claim that over 400,000 "Star" brand foot warmers are in use at



the present time. Lehman Bros. also produce the celebrated Lehman's Improved Coal Kake-ettes. In their advertisement in this number they speak of five different styles of heaters. How is your supply of Lehman heaters, Mr. Jobber and Dealer, and how about your coal supply? See ad. and write.

SOMETHING NEW IN COLORS.

Valentine & Company, whose coach colors have always held a high place in the regard of the skilled coach painter, announce on another page of this issue an addition of several new shades, with a brief description of the goods. Nothing better illustrates the up-to-date methods of the company than its ready response to the new demands made on the coach painter by the fashions in automobile body painting. The new colors will be found just what are wanted for that purpose without the bother of mixing and experimenting, as they are the most approved color schemes employed by high-class builders in this newer branch of the art of body painting. The colors made by this company are of such a high standard, and so generally recognized as such, that nothing need be added in this connection.

A SLAP AT THE C. B. N. A.

The following communication by Mr. H. M. Foulk, of Oshkosh, Wis., vice-president of the Carriage Manufacturers' Association of America, is of especial interest at this time, inasmuch as the various phases of the subject on which he touches was discussed by several of the speakers at the C. B. N. A. convention:

"When the Carriage Manufacturers' Association of America was being formed, some of the wholesale builders of vehicles declined to join the new organization because there was a society or combination known as the C. B. N. A. which was claimed to be able to handle all matters concerning the industry of carriage manufacturing.

"Many developments of the last two years have shown the inefficiency of the C. B. N. A. to adequately take care of the needs of the wholesale building and selling of vehicles, but at the conference of the last Federation of Dealers and the C. B. N. A., in Chicago, Oct. 15th, this was made so plain that no fair person can now dispute it.

"The National Federation of Dealers appealed to the C. B. N. A. for relief from the abuses of retail selling of vehicles at low prices at state fairs and other exhibitions, and the retiring president of the C. B. N. A. was reluctantly obliged to admit that his organization, the C. B. N. A., was not so constituted nor had any powers to take the matter up and correct the abuses complained of by the dealers.

"Another ex-president of the C. B. N. A. plainly told the dealers that the C. B. N. A. was a social organization—that their only meeting, an annual one, was simply a gathering of all kinds of vehicle manufacturers and accessory trades to break bread, shake hands, buy supplies, enjoy themselves and wind up with an entertainment.

"No association of business men can manage the ever changing affairs of the twentieth century commercialism, which has but one meeting a year. No organization as large in its diversified membership as the C. B. N. A. with active, passive and honorary members, and embracing all the accessory trades, retail manufacturers of vehicles, makers of parts, hacks, trucks, specialties and such can properly take up and bring to a mutual settlement the problems which rise up constantly before the vehicle dealers of the country. The federation of dealers requires cooperation and assistance from an organization of wholesale vehicle makers, from those who only make such carriages, etc., as the dealers buy and sell, who do their business solely with said dealers and who are constantly in communication with them; with an association which has frequent meetings and can quickly call a special meeting of its executive committee and to whom appeals and protests can be submitted immediately upon their necessities being brought forth by the exigencies of trade.

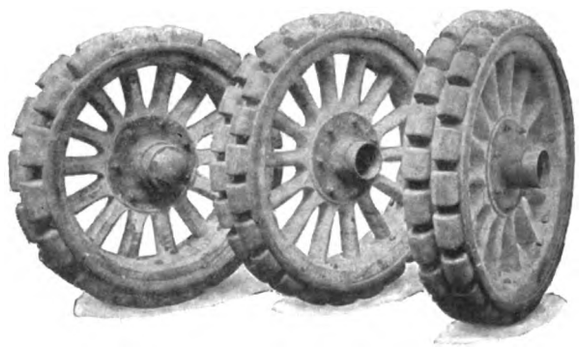
"Now the respectful retiring president of the C. B. N. A. was not fair to the Carriage Manufacturers' Association of America. He could place himself in a position to assist the Federation of Dealers in their desire to abolish an admitted wrong. He knew the Carriage Manufacturers' Association of America was created for just such work as the dealers desired, that it had maintained its organization during the most trying year the vehicle industry has ever passed through, and was in session arranging its affairs for another year, re-electing its officers and getting in better shape to handle the complexities of the trade. The manufacturers of farm and lumber wagons have a strong and respected organization, specifically created and carried on to meet the Federation of Dealers and mutually discuss and settle the problems which harass the selling and distribution of heavy wagons. When trouble or uncertainty comes up, the Federation of Dealers know where to go and who to confer with, regarding the wagon business, as the National Wagon Association maintains a regular office in Chicago and Mr. McCullough, their competent secretary, can be found at all times to assist them in any work that they find necessary to perform in the relations be-

Digitized by Google

tween makers and sellers of all kinds of heavy wagons. The Carriage Manufacturers of America are about to establish a similar office in Chicago, in charge of a qualified secretary, who will give his entire time to the attention of the dealings between members of his association and the Federation of Dealers and hereafter it will not be necessary for the dealer to appeal in vain to the C. B. N. A. for relief from an evil, which, if not soon corrected, will cause great injury to the entire light vehicle industry."

LATEST COMMERCIAL CAR TIRE.

Rubber tires for commercial motor vehicles has been a subject of considerable thought on the part of tire manufacturers, as the heavy load conveyed by this type of vehicle necessitates an entirely different line of experimenting and an entirely different type of tire from that which is in general use on the pleasure cars of to-day. Almost as many different principles have been tried out as there are commercial cars, and all with



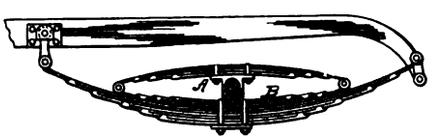
varying results, some features of merit being found in every type. Illustrated herewith is the latest production of the Consolidated Rubber Tire Co., of New York and Akron, O. It is styled the "Kelly-Springfield" sectional tires for commercial motor vehicles. Note the illustration. As each section is individual, there is no creeping to contend with. Furthermore the sectional tread furnishes a grip to the road that means progress and no skidding. It's the one best invention of the time for commercial cars. Write for full particulars.

COMBINATION SPRING AND SHOCK ABSORBER

This invention relates to improvements in spring suspensions and more particularly to a spring suspension adapted for vehicle use, patent for which was recently granted to William O. Worth, of Evansville, Ind.

Heretofore the springs for vehicles have usually been engaged directly between the axle and body lying wholly above the axle and transmit even under the best conditions considerable of the jar and shock received from the axle directly to the body of the vehicle to the annoyance and discomfort of the occupants or injury to the load when the roads are rough.

It is an object of the invention to provide a spring suspension



for vehicles or other purposes in which multiple springs, each composed of a plurality of sections are so constructed and arranged that all shocks are indirectly transmitted through the spring sections and are thereby absorbed before reaching the body. The accompanying illustration is a side view of a spring and spring suspension embodying this invention.

The operation is as follows: Any obstruction in the road which throws the axle upwardly imparts its shock first to the spring at section A, the middle of which is bowed up somewhat by the upward stress on the axle, while the weight of the body being carried centrally on the section B and acting oppositely from the axle, the ends thereof are sprung upwardly and away from the body spring C, the middle of which may also with large obstructions be sprung upwardly somewhat, though ordinarily the sections A B do practically all the work except that the long body spring C absorbs stresses too great to be absorbed by the other sections. Of course the section B is sprung away from the section C on the upward movement of the axle, both springs being fixed in the direction of their greatest resistance; in consequence when the obstruction is passed the downward movement of the axle is entirely absorbed by the quick return of the springs to normal and the body is thus carried without vibration or appreciable vibration even on rough roads though the car be driven at a high rate of speed.

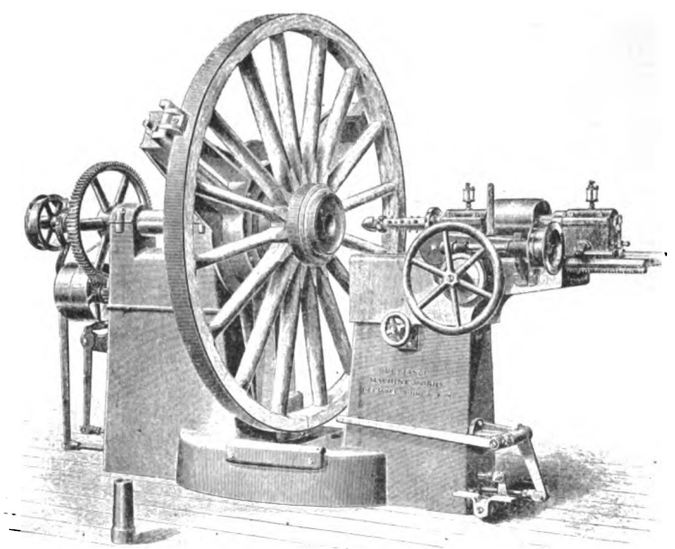
The danger of breakage from the recoil from severe shocks is obviated inasmuch as the recoil is always limited by the presence of the axle, clip and butting pad between the sections B and A, and also by the coaction of the ends of the section B and sections C and the frame, or between the spring sections B and A insure each section acting with maximum efficiency independently and the shock from starting, sudden stopping, backing, etc., is also more readily absorbed.

AUTOMATIC WHEEL BOXING MACHINE.

This engraving represents a heavy automatic wheel boxing machine, especially intended for the use of wagon, truck and artillery wheel builders for boring the wheel's hub for the reception of the box. It is calculated to bore and finish the hole at one cut and cup both ends of the hub at one starting and stopping of the machine.

The frame is a heavy casting in one piece of sufficient weight and strength to do the heaviest work without jar or chatter.

The wheel chuck is universal and it is fitted to a 6-in. spindle. All the dogs are actuated simultaneously by the turning with a



wrench any one of the three screw heads, opening and closing to receive wheels from the small sizes up to 75 inches in diameter at the largest. The chuck holding the wheel being universal accurately centers the wheel without any care on the part of the operator.

The wheel is made to revolve at fifty turns per minute and the boring bar at 2,200 rotations. A set of wheels treated by this method will run true and track alike when placed upon the axle.

This machine, which is made by the Defiance Machine Works, Defiance, O., is the largest and most powerful of its kind built and it is fitted with the greatest care. All the wearing surfaces are extra large and are scraped to a perfect bearing.

Digitized by Google

Trade News From Near and Far

NEW FIRMS AND INCORPORATIONS.

D. S. Dineen has engaged in the vehicle business in Huron, S. D.

Brennan & Saustrom have engaged in the vehicle business in Mohall, N. D.

Ernest Wilson will engage in the implement and buggy business in Benedict, S. D.

Alva George will engage in the carriage and implement business in David City, Neb.

The Hickory Spoke Works has been organized at Port Payne, Ala., with a capital of $12,000.

The Friction Axle Co. has been incorporated with a capital stock of $25,000 in Santa Monica, Cal.

Alcorn & Stevens, of Ionia, Kan., are about to add a line of implements and vehicles to their stock.

The Lake Union Carriage Co. has been incorporated in Olympia, Wash., with a capital stock of $2,400.

The Herschide Motor Car Company has been incorporated at Cincinnati, Ohio, with a capital of $50,000.

The Elizabeth City Buggy Co. has purchased a building in Elizabeth, N. J., and will equip it as a buggy factory.

The Brainard Lumber Co., of Ashdown, Ark., will establish a hardwood mill to manufacture buggy and wagon material.

The Elk Buggy Co., of Griffin, Ga., and the Norman Buggy Co., of Covington, Ga., will consolidate and establish their headquarters at Griffin.

The Cope Company has been incorporated at Newark, N. J., with a capital of $50,000. The incorporators are M. Munn Dodd, Grace G. Conley and Alonzo Church. The company is to manufacture carriages and automobiles.

The James Pullar Company has been incorporated at Hartford, Conn., with a capital of $125,000, and will manufacture and repair carriages. The incorporators are James Pullar, James Gorman Pullar and Thomas F. Foley, all of Hartford.

BUSINESS CHANGES.

M. Carrier has sold his vehicle business in Lone Elm, Kan., to A. W. Wiggins.

H. A. Elias has purchased the Bardwell stock of vehicles, etc., in Manhattan, Kan.

J. W. Sanders, Fayetteville, Ark., has sold his carriage factory to J. C. Vaughn.

Lard Dale has purchased the vehicle business of James Jacobson, in Story City, Ia.

D. V. Lynn has purchased the Dwyer implement and vehicle business in Clyde, Kan.

Miller & Rich have succeeded to the vehicle business of Chas. Brown, in Moorhead, Ia.

Allen Sanford, Kensington, Kan., has sold his stock of buggies, etc., to F. E. Leake.

L. P. Zimmer has sold his carriage business in Coeur d'Alene, Ida., to Grier and Ruger.

Frank Barker has purchased the stock of carriages of A. F. Wenzl, in Steinauer, Neb.

J. G. Bottoroff has sold his carriage and implement business in Campbell, Neb., to H. Crilly.

Joe. Lauer has sold his vehicle and implement business in Shickley, Neb., to Clinton Smith.

D. W. Ferguson has sold his stock of vehicles, etc., in Gothenburg, Neb., to Geo. A. Shostrom.

L. S. Williamson & Co. have purchased the vehicle and implement business of H. M. Lightfoot, in Austin, Tex. They formerly owned the business.

Patrick & Bump have purchased the vehicle business of W. H. Asher & Son, in Coon Rapids, Ia.

J. A. Garrett has purchased the Caldwell vehicle and implement business in Summerfield, Kan.

Henry Beaudry has sold his vehicle and implement business in Rathdrum. Wash., to C. W. Royce.

T. B. Lewis has purchased the vehicle department of the May & Son Hardware Co., in Belton, Tex.

Walz Bros., of Carroll, Ia., have sold their stock of vehicles, etc., to J. C. Hammond, of Mapleton.

Harbaugh Bros. have sold their implement and vehicle business in Woodruff, Kan., to J. K. Hilton.

J. C. Cowden & Son, in Admire, Kan., have been succeeded in the vehicle business by W. F. Standiford.

Charles and W. C. Peterson have purchased the stock of vehicles, etc., of Walter Huston, in Geneva, Neb.

T. A. Lukehart, Dubois, Pa., has sold his interest in the Huston & Irwin Manufacturing Company, of that city, to J. M. Montgomery.

W. M. Driscoll has purchased the carriage and implement business of W. W. Houser, in Trenton, Neb., for Hugh L. Alexander, and will manage the business for him.

FIRES.

The carriage works of W. L. Baker, Gallatin, Tenn., has been destroyed by fire.

The carriage shop of U. L. Herzog, Businessburg, Pa., has been destroyed by fire.

The Oscar Lear Automobile Co., of Springfield, Ohio, has suffered a $5,000 fire loss.

The Agee wagon works, at Camden, N. J., was destroyed by fire recently. Loss, $75,000.

Fire in the carriage factory of G. T. Stehling, Milwaukee, Wis., caused a damage of $2,500.

The C. W. Hall carriage factory ,at Bridgeport, Conn., suffered a loss of $10,000 by a recent fire.

The warehouse of the Golden-Linweaver Carriage Co., in Harrisonberg, Va., has been damaged by fire. Loss, $5,000.

The vehicle and implement store of James Armistead, in Columbia, Mo., has been damaged by fire to the extent of $1,000.

MISCELLANEOUS.

J. M. Dunn, Springfield, Mass., is erecting a new carriage shop.

The Motor Buggy Company, of Fort Wayne, Ind., will move to Joliet, Ill.

The John G. Rehkoff Buggy Company, Paducah, Ky., has made an assignment.

A. Wrenn & Son will build a $10,000 annex to their carriage factory in Norfolk, Va.

The McLaughlin Carriage Company will erect a $15,000 factory at Hamilton, Canada.

A. J. Williams has been elected president of the New Buggy Body Company, at Owensboro, Ky.

O'Brien & O'Connell, carriage builders in Terre Haute, Ind., are erecting a large addition to their factory.

The C. D. Franke Company, Charleston, S. C., is erecting a large two-story warehouse at a cost of $40,000.

The Royal Body Buggy Company, of Owensboro, Ky., which

Digitized by Google

failed several months ago, has been reorganized. The new concern is capitalized at $10,000.

The Joliet Wheel Mfg. Company, Joliet, Ill., will erect a new plant, to be 270x70 feet, and build entirely of brick.

The W. M. McIntyre company, of Auburn, Ind., is arranging to establish two branch carriage factories in Canada.

The receiver of the Harrison wagon works, Grand Rapids,, Mich., has received an offer for the plant and remaining personal property.

W. A. Elbert, who for many years has been superintendent and general manager of the Hickman-Ebbert Wagon Company, at Owensboro, Ky., has resigned.

The plant of the Marshalltown, Iowa, Buggy Company will increase its output about 40 per cent., and will add to its force of employes about the same percentage.

Henry R Miller, who established the Excelsior Carriage Company, Manchester, N. H., will retire and will be succeeded by Orlo M. Greely and Edwin J. Pease, who have been with the company for many years.

NEW AUTOMOBILE INCORPORATIONS.

The Daykin Automobile Co. has engaged in business in Daykin, Neb.

The Southern Automobile Co. has been incorporated in Charlotte, S. C., with a capital stock of $25,000.

The Franklin Motor Car Company has been incorporated at Kansas City, Mo., with a capital of $10,000.

The Miller Automobile Company has been organized at White River Junction, Vt., with a capital of $5,000.

The Biescheld Auto Co. has incorporated with a capital stock of $10,000, and has engaged in business in Grand Island, Neb.

Henry F. Zalmer, C. F. Drinklage and others have organized the Pioneer Motor Car Company at Kansas City, Mo., with a capital of $5,000.

The entire stock and business of the American Motor Company, Eau Claire, Wis., has been purchased by R. M. Burdick and C. W. Dandewalker.

The DeWitt Motor Vehicle Company has been incorporated at North Manchester, Ind., by V. L. DeWitt, Mary DeWitt and James H. Rose. Capital, $10,000.

The Tennessee Auto Company has been incorporated at Nashville, Tenn., with a capital of $13,000. The incorporators are J. K. Polk, J. J. Vertrees, W. O. Vertrees and W. J. Wallace.

The Deal Buggy Co., of Jonesville, Mich., has made preparations to add the manufacture of motor buggies to its output. The regular manufacture of buggies and vehicles will be maintained as heretofore.

The Huffman Automobile Company, Omaha, Neb., has filed articles of incorporation. William L. Huffman and W. R. Homan are the incorporators. The company will buy, sell and rent automobiles. Capital, $25,000.

The Non-Blowout Auto Tire Company has been organized at Newark, N. J., with a capital stock of $500,000. The incorporatore are Edward D. Kirkholz, Frederick R. Tyrell and Robert S. Terhune. The company is to manufacture non-blowout automobile tires, etc.

SPEEDY SHAFT COUPLER.

The Speedy Shaft Coupler Company, of Langworthy, Iowa, is manufacturing one of the neatest and most durable couplers on the market. They make the bolt in two sizes and it will fit either double or single rigs. The springs are made right and left so that the bolt can be put in without removing the wheel, Write them and receive sample free

If all the evil was abolished from the world you could not stay away from it any more than you could now if you wanted to.

CONGRATULATIONS FROM GERMANY.

Diekirch, October 27, 1908,

Editor of The Hub: I have come in possession of a copy of the Golden Anniversary and Convention number of your paper The Hub, and I cannot fail to offer you my sincere congratulations on the occasion of this jubilee, which is an historical event in the entire world's carriage industry. To-day I extend to your journal, which is devoted to the interests of carriage designing and making of the entire world, further great success and long life. Very truly yours,

PIERRE WAGONER, Coach Painter,
Diekirch, Germany.

TRIMMING LEATHER.

In every department of manufacture there are established standards, which standards, because of their degree of excellence win recognition and become popular with the trade. There is no line of trimming leather on the market today that quite compares with the product of T. P. Howell & Co., of Newark, N. J. This famous old institution has made such a careful study of the carriage and automobile leather question that there is never a doubt about the stock that goes into a job when it carries the "Lion" trade mark. So popular is the demand for this brand of leather that the manufacturers have been obliged to greatly increase their facilities. Extensive alterations have recently been completed which place them in the position of the largest producers of carriage and automobile leather in the world.

W. Fred Clegg, who for the past ten years was superintendent for Blanchard Bros. & Lane, and his first tanyard assistnt, Theo. E. Lundy, are both now under contract with T. P. Howell & Co. The addition of these men will add further fame to the brand of the "Lion."

Constantly increasing demand is the greatest testimonial of merit. Hitch up to the "Lion" brand and you will back up your work with the "King of Leather."

Wants

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, 5 cents a word. Initials and figures count as words. Minimum price, 30 cents for each advertisement.

HELP WANTED.

Wanted—Experienced painters of all kinds, color varnishers, stripers, gear finishers, body finishers, craters, black-smiths, wood-workers. None but mechanics need apply. Address Henny Buggy Co., Freeport, Ill.

Wanted—A man thoroughly conversant and acquainted with the carriage and wagon trade in and around Greater New York. Must be capable and experienced. None others will be considered. Give reference and state salary expected. Address Timken Roller Bearing Axle Co., Canton, Ohio.

SITUATIONS WANTED.

Wanted—A competent body maker, who now has charge of the body department of a first class custom shop, desires to make a change. Address "East," care The Hub, 24 Murray St., New York City.

Wanted—Situation by foreman trimmer with plenty of experience and best references. Address "Y. K.," care The Hub, 24 Murray St., New York City.

Wanted—Position as assistant superintendent or foreman of the wood department. Good on all light and heavy work and autos. Can draft. Address Box 86, care The Hub, 24 Murray St., New York City.

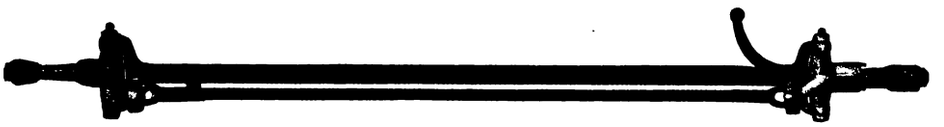
Wanted—Position as superintendent or foreman of the wood department of a large carriage plant. Understand heavy automobile work and drafting. Good reference. Address Box 32, care The Hub, 24 Murray St., New York City.

PATENTS.

Patents—H. W. T. Jenner, patent attorney and mechanical expert, 608 F. St., Washington, D. C. Established 1883. I make an investigation and report if a patent can be secured and the exact cost. Send for full information. Trade-marks registered.

Digitized by Google

MOTOR BUGGY AXLES



Front Axle, Rear View



Square Dead Rear Axle

——WITH——

TIMKEN ROLLER BEARINGS

Such as are being used by most of the successful builders of the high wheel type of cars. Note the names of a few of the manufacturers who are using them

HOLSMAN AUTOMOBILE CO.
SCHACHT MANUFACTURING CO.
COLUMBUS BUGGY CO.
INTERNATIONAL HARVESTER CO.
RELIABLE DAYTON MOTOR CAR CO.
THE BENDIX CO.
CHICAGO COACH & CARRIAGE CO.
W. H. KIBLINGER CO.

If you are considering entering this field, be guided by the experience of older manufacturers. **Timken Axles and Bearings** are no experiment, but have been proven a success by years of satisfactory service. No better can be procured, regardless of price. Knuckles are **drop forgings,** and hardened bolts are used. Boxes are of **pressed steel,** with hardened and ground cups inserted. All bearings hardened and ground, thus insuring perfect bearing surface and durability.

Bearings guaranteed for two years.

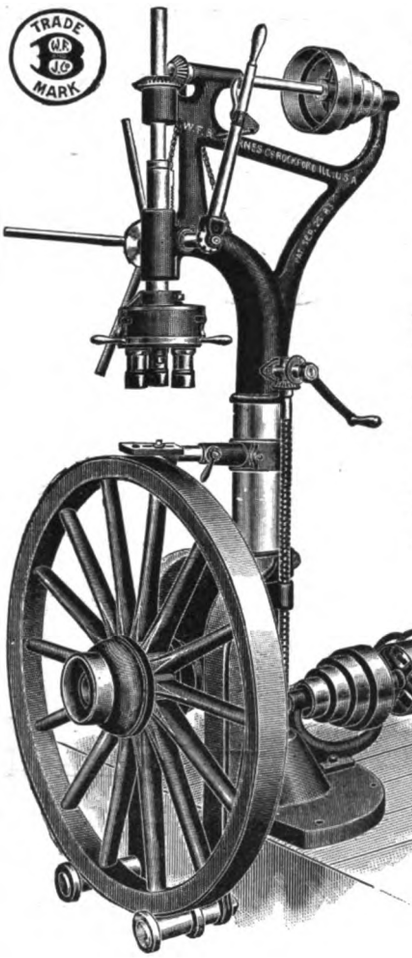
If interested, write for catalog and prices.

The Timken Roller Bearing Axle Co.

Factory and Main Office: **CANTON, OHIO**

New York Office: **10 E. 31st STREET** Chicago Office: **429 WABASH AVENUE**

Digitized by Google



A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

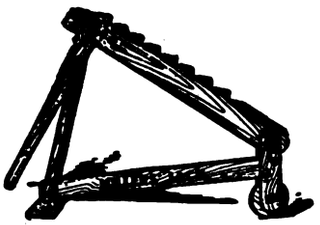
Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.



Made in four sizes, Nos. ½, 1, 2, and 3.

JACKS FOR BUGGIES AND WAGONS

Miller Patent Wagon Jack Made by

J. V. HANKINSON,

Successor to THOS. MILLER,

FRANKLIN, OHIO.

Write for particulars and prices.

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.

745 THIRD AVE., BROOKLYN, N. Y.

INDEX TO ADVERTISEMENTS.

American Roller Bearing Fifth Wheel Co..... 12
American Wood Block Co..... 26
Auxiliary Spring and Ventilating Button Co.....2d cover

Barnes & Co., W. F. & John..... 12
Beckwith & Chandler Co..... 5
Bemil-Ashcroft Co.....3d cover
Bentel & Margedant Co..... 8
Bertram & Lamoreaux..... 22
Bradley & Son, C. C..... 23

Carter Co., George R..... 8
Central Bureau of Engraving..... 14
Columbus Bolt Works.....4th cover
Consolidated Rubber Tire Co..... 6
Cooper Co., J. A. & D. P..... 24
Cortland Carriage Goods Co..... 16
Crane & MacMahon.....2d cover

D'Arcy Spring Co..... 15
Dalzell Axle Co..... --
Defiance Machine Works..... 15
Devoe, F. W., & Raynolds Co., C. T.....3d cover

Eagle White Lead Co..... 8
Eccles Co., Richard..... 20
English & Mersick Co., The..... 7

Fitch Gear Co..... 20
Frantz Body Mfg. Co..... 17
Fairfield Rubber Co..... 24

Gerhab, Jacob 24
Gifford & Son, John A..... 13
G.-L. Economizer Co..... 7
Goodrich Co., B. F., The..... 2
Goodyear Tire and Rubber Co..... 5

Hankinson, J. V..... 12
Harland & Son, Wm..... 1
Hoopes Bro. & Darlington, Inc.....2d cover
Howell & Co., T. P..... 25

Indianapolis Bolster Spring Co..... 22

Jewel Mfg. Co..... 24
Johnston Paint Co., R. F..... 4
Jones & Co., Phineas..... 13

Keystone Forging Co.....13
Kokomo Rubber Co.....4th cover
Koller & Co., J. B..... 20

Landsman Motor Co..... 14
Landers Bros. Co..... 22
Lehman Bros. 17

Masury & Son, John W..... 2
McKinnon Dash Co..... 4th cover
Miller Bros. 20

National Safety Fifth Wheel Co..... 22
National Spring and Wire Co..... 22
Nobles & Hoare..... —

Pomeroy & Fischer..... —
Porter, H. K..... 23

Russell, Burdsall & Ward Bolt and Nut Co..... 24

Sheldon Axle Co..... 23
Shortsville Wheel Co..... 18
Smith & Co., Edw..... 5
Sparks-Withington Co. 17
Speedy Shaft Coupler Co..... 5
Spring Perch Co..... 13
Standard Ball Axle Co..... 22
Standard Oil Cloth Co..... 19
Standard Varnish Works..... 3
Stein Double Cushion Tire Co..... 7
Studebaker Bros. Mfg. Co..... 26

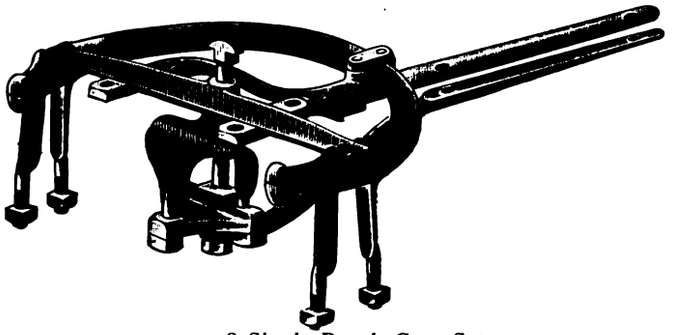
Timken Roller Bearing Axle Co..... 11
Tucker Wood Work Co..... 14

Valentine & Company..... 4

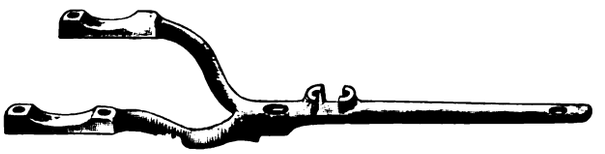
Wapakoneta Wheel Co..... 21
West Tire Setter Co.....3d cover
White, H. F..... 5
Wilcox Mfg. Co., D..... 13
Willey Co., C. A..... 5
Woodman, Joel H..... 23

Digitized by Google

FIFTH WHEELS—FORGINGS



1908 Single-Reach Gear Set.



Detachable Fork Perch Connection Used in 1908 Gear Set.

Greatest Line on Earth

WHEN ORDERING GEAR SETS BE SURE TO GET THE GENUINE

Wilcox Rear King-Bolt Gear Sets

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MANUFACTURING CO.

MECHANICSBURG, PENNSYLVANIA

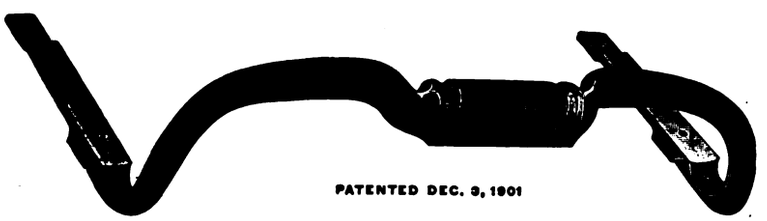
JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

Jones Wheels

BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.



PATENTED DEC. 3, 1901

THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland Pa.

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

Digitized by Google

SOLID BENDINGS



MAKE FAULTLESS SEATS

CATALOG "H" SHOWS SIZES
WRITE FOR IT
THE TUCKER WOODWORK CO. SIDNEY, OHIO.

Build Your Own Auto

A GASOLINE ENGINE TO FIT ANY BUGGY or WAGON

LANDSMAN MOTOR CO.
908 Hickory St. ST. LOUIS, MO.
Write for Catalogue.

MANUFACTURERS

DESIRING FIRST-CLASS ILLUSTRATIONS OF THEIR PRODUCT, AT REASONABLE PRICES, SHOULD PERMIT US TO SUBMIT AN ESTIMATE.

Central Bureau of Engraving
COMMERCIAL ENGRAVERS
157-159 WILLIAM STREET, NEW YORK

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

Axles, Etc.
Dalzell Axle Co., South Egremont, Mass.
Sheldon Axle Co., Wilkes-Barre, Pa.
Sparks-With ington Co., The, Jackson, Mich.
Standard Ball Bearing Axle Co., Lancaster, Pa.
Timken Roller Bearing Axle Co., Canton, Ohio.

Bodies, Seats, Etc.
Franz Body Mfg. Co., Akron, O.
Woodman, Joel H., Hoboken, New Jersy.

Bodies in the White.
Miller Bros., Amesbury, Mass.
Schubert Bros. Gear Co., Oneida, N. Y.

Bolts and Nuts.
Columbus Bolt Works, Columbus, Ohio.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

Carriage Cloths.
Wiese & Co., Wm., New York City.

Carriage Forgings.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

Carriage Hardware.
Gifford & Son, John A., New York.

Carriage Heaters.
Lehman Bros,, New York.

Carriage Goods.
Cortland Carriage Goods Co., Cortland, N. Y.
English & Mersick Co., New Haven, Conn.
Fairfield Rubber Co., Fairfield, Conn.
Gifford & Son, John A., New York.

Dashes, Fenders, Rails, Etc.
McKinnon Dash Co., Buffalo, N. Y.

Engraving.
Central Bureau of Engraving, New York City.

Fifth Wheels.
American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
National Safety Fifth Wheel Co., Lancaster, Pa.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

Finished Vehicles.
Studebaker Bros. Mfg. Co., South Bend, Ind.

Hubs.
American Wood Block Co., The, Delphos, Ohio.
Koller & Co., J. B., Mechanicsburg, Pa.

Jacks.
Hankinson, J. V., Franklin, O.

Lamps.
Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

Leather.
Howell & Co., T. P., Newark, N. J.

Machinery and Tools.
Barnes Co., W. F. & John, Rockford, Ill.
Bentel & Margedant Co., Hamilton, Ohio.
Defiance Machine Works, Defiance, Ohio.
G.-L. Economizer Co., The, New York.
Maxwell & Fitch Co., The, Rome, N. Y.
Porter, H. K., Everett, Mass.
West Tire Setter Co., Rochester, N. Y.

Miscellaneous.
Bertram & Lamoreoux, Detroit, Mich.
Jewel Mfg. Co., Chicago, Ill.
Standard Oil Cloth Co., New York.

Rubber Tires.
Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, O.
Goodyear Tire and Rubber Co., Akron, O.
Kokomo Rubber Co., Kokomo, Ind.
Stein Double Cushion Tire Co., Akron, O.

Shaft Couplings and Anti-Rattlers.
Bradley & Son, C. C., Syracuse, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Metal Stamping Co., New York City.
Speedy Shaft Coupler Co., Langworthy, Iowa.

Springs and Gears.
Auxiliary Spring and Ventilating Button Co., Detroit, Mich.
Cooper, J. A. & D. P., Struthers, O.
D'Arcy Spring Co., Kalamazoo, Mich.
Fitch Gear Co., Rome, N. Y.
Indianapolis Bolster Spring Co., Indianapolis, Ind.
National Spring and Wire Co., Albion, Mich.
Schubert Bros. Gear Co., Oneida, N. Y.
Spring Perch Co., Bridgeport, Conn.

Spokes.
Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.
Koller & Co., J. B., Mechanicsburg, Pa.

Strap Work.
Carter Co., Geo. R., The, Connersville, Ind.

Trimming Materials.
Stevens & Sackett Co., New Haven, Conn.

Varnishes, Paints and Japans.
Beckwith-Chandler Co., Newark, N. J.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Harland & Son, Wm., London and New York.
Johnston Paint Co., R. F., Cincinnati, O.
Masury & Son, John W., New York and Chicago.
Nobles & Hoare, London, Eng.
Pierce Co., F. O., N. Y. City.
Pomeroy & Fischer, N. Y. City.
Smith & Co., Edw., N. Y. City.
Standard Varnish Works, New York City.
Valentine & Co., New York, Chicago, Boston, Paris.
Willey Co., C. A., Hunter's Point, New York City.

White Lead.
Eagle White Lead Co., Cincinnati, Ohio.

Wheels.
Crane & MacMahon, New York.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.
Shortsville Wheel Co., Shortsville, N. Y.
Wapakoneta Wheel Co., The, Wapakoneta, Ohio.

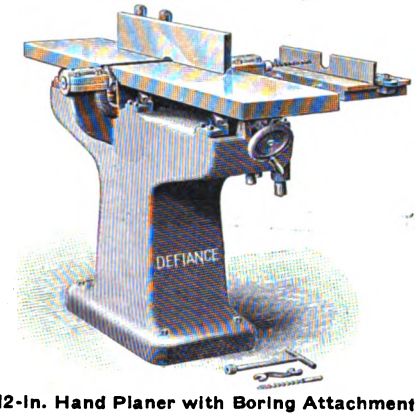
Wheel Stock, Bent Wood, Etc.
Crane & MacMahon, New York.
Koller & Co., J. B., Mechanicsburg, Pa.
Tucker Wood Work Co., Sidney, Ohio.

Digitized by Google

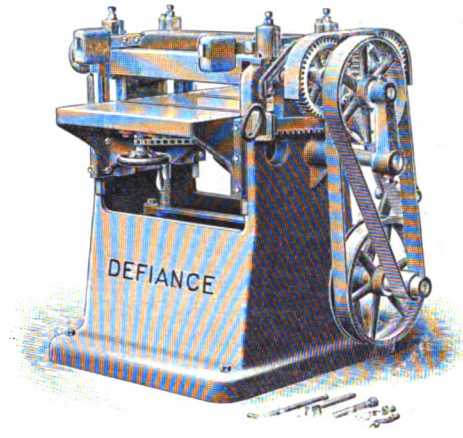
"DEFIANCE"
WOOD-WORKING MACHINERY

Invented and Built by

The Defiance Machine Works
Defiance, Ohio



12-in. Hand Planer with Boring Attachment

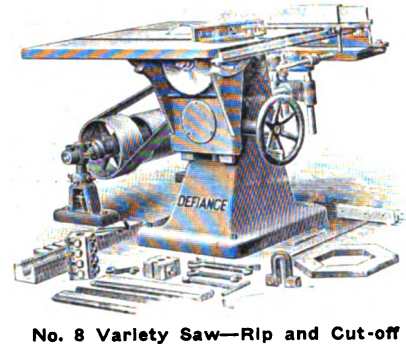


24-in. Single Surface Planer.

These Machines are made in large numbers. They are of a Strictly High Quality and are Sold at Moderate Prices.

For Making

Hubs, Spokes, Wheels, Wagons, Carriages, Rims, Shafts, Poles, Neckyokes, Singletrees, Hoops, Handles of all Kinds, Insulator Pins, Bobbins, Spools, Table Legs, Oval Wood Dishes and for General Wood Work.



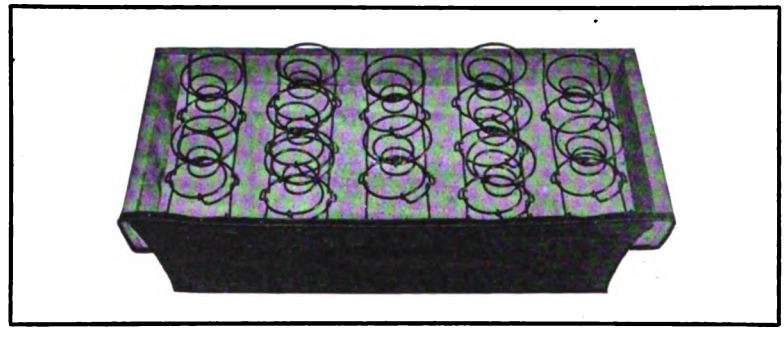
No. 8 Variety Saw—Rip and Cut-off

The Largest Exclusive Spring Seat Factory in America

FIVE DIFFERENT PATENTS. SIXTEEN DIFFERENT CONSTRUCTIONS.

Not a factory making spring constructions that we do not surpass in quality and price. If you want quality and price, take this question up with us. WE CAN DELIVER THE GOODS.

We Make Wire Constructions, in Every Shape and Size, for High Class Work. Submit Paper Pattern for Sample.



WOOD OR WIRE FRAME, SOFT EDGE CUSHIONS.

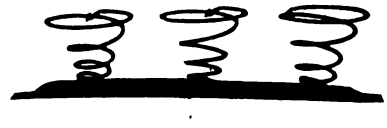
No. OF PATENTS ALLOWED
Others Pending

No. 726,817, April 28, 1903
No. 746,299, Dec. 8, 1903
No. 773,312, Oct. 25, 1904
No. 795,410, Mar. 21, 1905

Any one manufacturing or using a spring infringing any of the above patents will be proceeded against without further notice.

The CHEAPEST and BEST Spring Construction in America

Bars, 20-gauge Cold Rolled Steel. Springs, the Finest Quality and Highest Finish.



Made All Lengths with Any Number of Springs. To Nail to Top or Bottom of Seat. Ask for Sample. They are FREE.

D'ARCY SPRING CO. - - - - Kalamazoo, Michigan

Please mention "The Hub" when you write.

Digitized by Google

TO OUR FRIENDS:

It has been our aim for some time to produce a full line of Top Hardware suitable for carriages, auto buggies, buggy autos and automobiles. We have seen the demand for these goods coming, and felt that each particular vehicle demanded its own class of Carriage Top Hardware.

Buggy Bow Sockets.

Buggy



On bow sockets, in particular, we know that the lines of a buggy and a light carriage are right and should be maintained strong enough to stand the demands made upon the bow socket, but light enough in appearance to be in harmony with the other items used in the buggy. We maintain that strength, beauty and grace are the essentials in a carriage bow socket.

We do not believe in a socket that is sold for the buggy one day and for the automobile the next.

We have studied all the criticisms on buggy sockets that have come to us in an experience of fifteen years, and believe the criticism has been entirely in regard to the back bow's bending occasionally near the prop rest. This we have overcome. We guarantee our buggy bow socket is the strongest socket made to-day.

Auto Buggy



Auto Buggy and Buggy Auto Bow Sockets.

Auto buggies and buggy autos are demanding a bulkier style of bow socket, and we have brought out a socket midway between the buggy socket and the automobile socket, ready to meet that demand. We do not claim that it meets the demand of the fine carriage maker, nor of the automobile maker, but it does meet the demand for the auto buggy and the buggy autos. This bow socket is in harmony with the heavier lines of the buggy auto and auto buggy.

Automobile Sockets.

The automobile has its demand for a bow socket, and we have met that by bringing out the medium sized automobile socket for runabouts and lighter class of vehicles in this line, and the large size sockets for the heavy touring cars.

We have all the lines of carriage top hardware necessary to go with these bow sockets, and solicit your specifications. At the same time we ask you to remember that we have the largest capacity, and have made the longest study of the details of these goods, so that we can make them right.

Our prices are fair. We can make shipments promptly. We solicit your business.

We also have

Shifting Rails Top Joints Top Trimmings

Cortland Carriage Goods Company

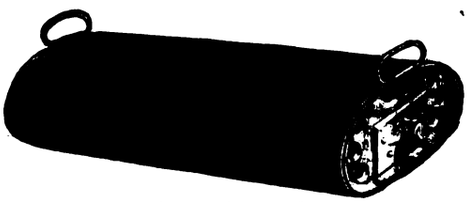
CORTLAND, N. Y.

Digitized by Google

Lehman Rock Bottom Prices Lehman

on our NEW Line of

"STAR" BRAND ★ FOOT WARMERS

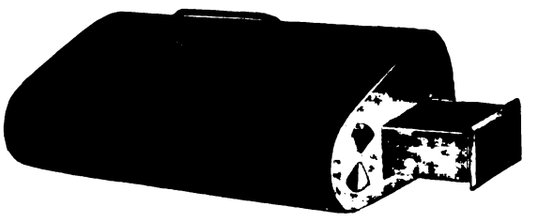


Oval or Universal Shape.

NOTICE.

These Heaters are sold in **not less** than one dozen lots.

Assorted styles if desired.



Triangle Shape.

Number		Per Dozen
29	12 inches long, oval shape, white metal ends, not covered	**$9.75**
29B	12 inches long, oval shape, white metal ends, asbestos lined, covered with carpet	**11.25**
25	14 inches long, oval shape, white metal ends, not covered	**10.50**
25B	14 inches long, oval shape, white metal ends, asbestos lined, covered with carpet	**13.00**

The unique feature of this Heater is the **damper** at each end, which is for regulating the heat at will or entirely extinguishing the burning coal.

Number		Per Dozen
21B	14 inches long, triangle shape, white metal ends, asbestos lined, covered with carpet	**$13.50**

BEAR IN MIND that our dampers, as well as all other parts of our Heaters, differ from other makes in that there are no bolts, nuts or screws to break, get lost, or get out of order.

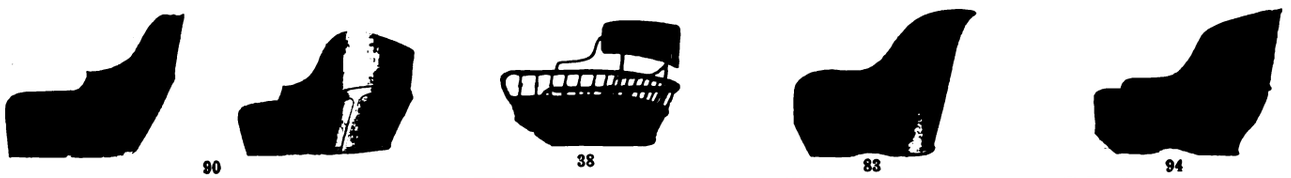
LEHMAN IMPROVED COAL in KAKE-ETTES **$5.10** **per case of 12 boxes**

INFORMATION! To meet the demand for heater coal of a size suitable for use in heating without breaking it, we are making Lehman's Improved Coal in Kake-ettes, 20 pieces in a box. No breakage in shipping.

LEHMAN BROS., Manufacturers, 10 Bond St., New York **J. W. ERRINGER, General Western Sales Agent**

Largest Manufacturers of Carriage Heaters and Coal in U. S. 45 East Congress Street, Chicago, Ill.

Mention The Hub when writing.



90 38 83 94

THE FRANTZ BODY MFG. CO., Akron Ohio



88 44 68 49 60

Something Entirely New

By using our **PENINSULAR BALL BEARING** attachments you can change any common axle job into a ball bearing job in 10 minutes time. It is not necessary any more to carry ball bearing axles in stock.

After the buggy is completed as a regular common axle job you can in 10 minutes change it to a ball bearing job. Let us tell you about it.



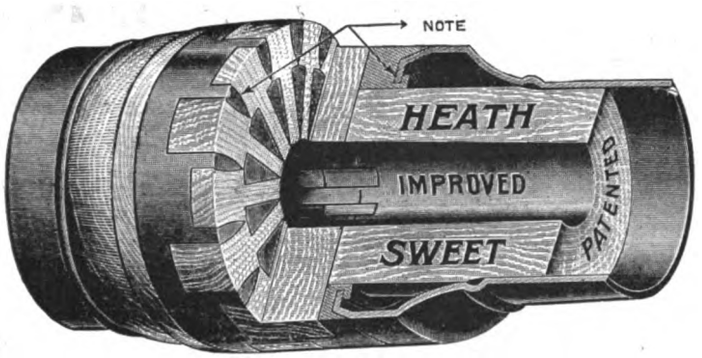
The Sparks-Withington Company

Jackson, Michigan

Please mention "The Hub" when you write.

Digitized by Google

SOMETHING NEW



NOTE POSITIVE POINTS.

1—Same Spoke Lock as Original Sweet.
2—No Wooden Cap on either end to Split or become Loose in any way.
3—Solid Wood from Back to Front.
4—Center and Front Bands joined with a Perfect Internal Lock, making a Solid Band from Rear of Spoke to Out End of Point.
5—Is as Light as the Sweet or Wood Hub with Bands of the Same Size.
6—The Style which the Best Carriage Builders in the Country are Using.

In Ordering Specify **HEATH HUB**

MANUFACTURED BY THE

Shortsville Wheel Company

Shortsville, N. Y.

C.H.A.T.

Helps Secure Situations.

Carriage, Harness and Accessory Traveling Salesmen's Association

OF THE UNITED STATES.

All Commercial Travelers in Above Lines Eligible. No Others. Pays Death Benefits.

Membership Fee, - - - $3.00
Annual Dues, - - - - 1.00

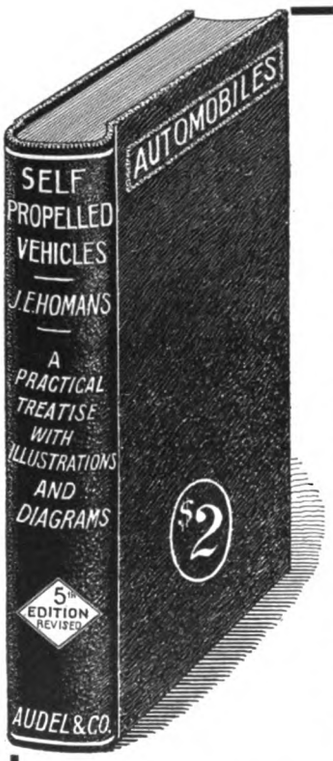
Employers of Traveling Men eligible to join as associate members on payment of $5.00, and are exempt from all further dues.

Manufacturers of carriages, harness or goods that enter into their construction, jobbers of same, can secure good, reliable and efficient salesmen through our Association, as the members of this Association have the best facilities for knowing all about men who are seeking situations, and none will be recommended unless they are first class and worthy of support.

Salesmen in need of a situation, or manufacturers in need of a salesman, address for further information,

L. H. KRONFELD, Secretary.

Box 57, Mount Vernon, N. Y.



"Self-Propelled Vehicles"

Fifth Edition, Revised.

A practical treatise on the theory, construction, operation, care and management of all kinds of Automobiles.

By

JAMES E. HOMANS, A.M.

Contains 608 pages and upwards of 500 illustrations and diagrams, giving the essential details of construction and many important points on the successful operation of the various types of motor carriages driven by steam, gasoline and electricity.

This work is now the accepted standard, explaining the principles of construction and operation in a clear and helpful way. This book will be sent postpaid to any address in the United States, Mexico or Canada upon receipt of $2.00.

Address

TRADE NEWS PUBLISHING COMPANY

24 Murray Street, New York

Please mention "The Hub" when you write.

Digitized by Google

Carriage Enameled

OIL CLOTH



THAT HAS THE TRADE MARK **"MERITAS"** STAMPED ON THE BACK IS THE FINEST IN

Quality and Finish

Because of its Superior Construction it stands the wear and tear

You can depend on "Meritas" as being absolutely the best

It is built for service and is guaranteed by the world's largest makers

MERITAS TRADE MARK STANDARD OTC COMPANY REGISTERED OIL CLOTH

Standard Oil Cloth Co.

320 Broadway

New York

MERITAS TRADE MARK STANDARD OTC COMPANY REGISTERED OIL CLOTH

Please mention "The Hub" when you write.

Digitized by Google

ECCLES BALL-BEARING COUPLINGS

The cut shows our coupling bolted to axle, and the form our flat leather bushing takes when the shafts are placed and locked in the coupling. The leather can be securely fastened in by the user, by driving a soft wire nail through the small hole we drill, which clinches it.

When the shafts are removed, the bushing does not come out, but stays in the Coupling where it belongs. NO LOST BUSHINGS WHEN YOU USE OUR COUPLINGS.

We would like to send you our circular and have you try our Couplings. They will save you money.



See the clinch?

Patented June 11, 1907.

Patented Nov. 25, 1902.

The spring is pivoted at the front so that it can be turned forward out of the way of the wrench while clipping the Coupling to the axle.

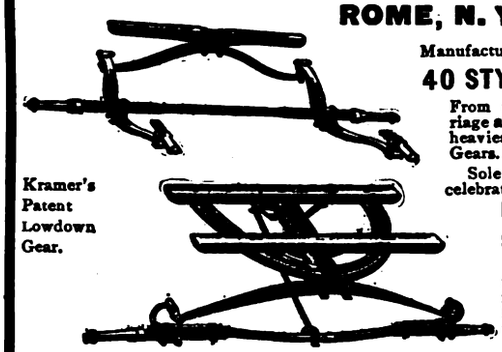
These are two of the good points, but there are plenty more desirable features in our Couplings.

We also have a Catalogue showing our full line of CARRIAGE and WAGON FORGINGS, all of which we make

RICHARD ECCLES COMPANY, AUBURN, N. Y.

FITCH GEAR CO.

ROME, N. Y., U. S. A.



Kramer's Patent Lowdown Gear.

Manufacturers of over

40 STYLES of GEARS

From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.

Sole Manufacturers of the celebrated

Kramer Lowdown Short Turn Gear

It is the Finest Gear for Drop Centre-Body for Milk, Bakers' or Butchers' Wagons on the market.

Send for our No. 22 Catalogue, just out.

Journal for the Carriage and Automobile Trade

The Hub

Published Monthly at Two Dollars per Year

J. B. Koller & Company

Manufacturers of all kinds and sizes of

Finished Spokes and Bent Rims

Also all kinds of

SLEIGH, SLED AND BOB SLED RUNNERS

MECHANICSBURG, PA.

MILLER BROTHERS

Builders of

CARRIAGES

IN THE WHITE

AND

Automobile Bodies

AMESBURY, MASS.

Please mention "The Hub" when you write.

Digitized by Google



THE REAL WORTH OF WHEELS

You'll know when you order

'WAPAKONETAS'

Light and Heavy

Sarven, Warner, Compressed Band and Wood Hub

CAPACITY, 300 SETS OF WHEELS PER DAY

Send For Our Price List

The Wapakoneta Wheel Co.

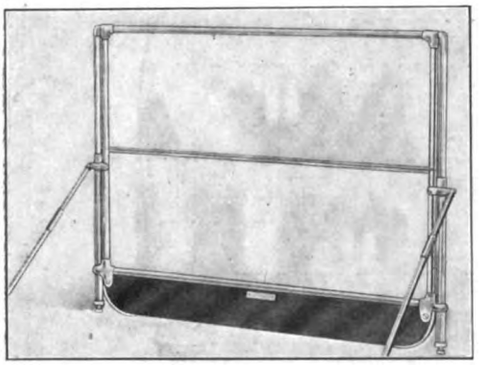
WAPAKONETA, OHIO



Please mention "The Hub" when you write.

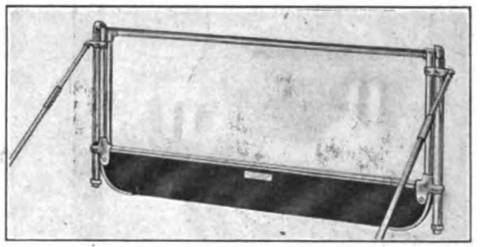
Digitized by Google

WILL NOT RATTLE—TELESCOPE WIND SHIELD





Try one and be convinced. Get a Wind Shield that is all we claim for it—absolutely the best on the market; one for which you need never make an apology; one that is not only a Wind Shield but an improvement to any car.





BURTRAM & LAMOREAUX,

72 Fort Street East, Detroit, Mich.

Our Carriage or Spring Edge Cushion Frame



Is not an Experiment, but has been tried and stands the test.
We would like to quote you prices.
NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

For Weak or Overloaded Springs.

VICTOR STEEL SPRING BUFFERS

Save wagon, prevent breakdowns, and add materially to the carrying capacity. If your dealer does not have them write to us direct.

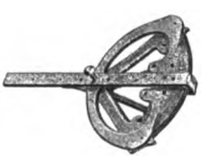


Made in Four Sizes: 0, 1 1-4 in. spring & under; 1, 1-4 in. to 1 1-2 in. spring; 2, 1 1-2 in. to 2 in. spring; 3, 2 in. to 2 in. spring.
Carrying capacity of each spring: No. 0, 400 lbs.; 1, 750 lbs.; 2, 1000 lbs.; 3, 1250 lbs.

Manuf'd by INDIANAPOLIS BOLSTER SPRING CO.
INDIANAPOLIS, INDIANA.

National Safety Short-Turning Fifth Wheels

Are Giving Universal Satisfaction.
Ask Your Dealer for Them.
National Safety Fifth Wheel Co., Lancaster, Pa.



Style C.

NEW YORK CITY

THE HERMITAGE

A CLUB HOTEL FOR MEN

The name tells the story.

Seventh Ave. and Forty-second St.

Junction of Broadway.



Restaurant on the street floor—a restaurant where ladies are welcome.

Every other part of the house exclusively for men.

Telephones in every room.

Respectful, quiet, obedient and alert Japanese servants.

Bedroom and bath $2.00 a day upward.

Send for Booklet.

T. F. PADDELL, Proprietor

IT DOES THE TRICK R. F. D. SPECIAL



This axle runs easier than any other, and requires no attention. IT'S A WONDER Ask why. We can prove it.

STANDARD BALL AXLE WORKS, Lancaster, Pa.

LOWEST PRICES. *PROMPT SHIPMENTS.* *SUPERIOR QUALITY.*

TOLEDO **LANDERS BROTHERS CO.** **BOSTON**

WE ARE THE PIONEERS IN THE

SHEETINGS, WEBBING — 32 GRADES SINGLE DOUBLE THREE-PLY — **BUCKRAM** LINE — FOUR-PLY AND CANVAS LINED — DUCKS, WADDING

Celluloid Sheets, Enameled Muslins, Drills and Ducks

SCRIM. *RATTAN MOULDING.* *BATTS.* *OILED DUCK.* *OIL CARPET.*

Digitized by Google

THE BRADLEY SHAFT COUPLING



OPEN

Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME !

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1½ in. in section.

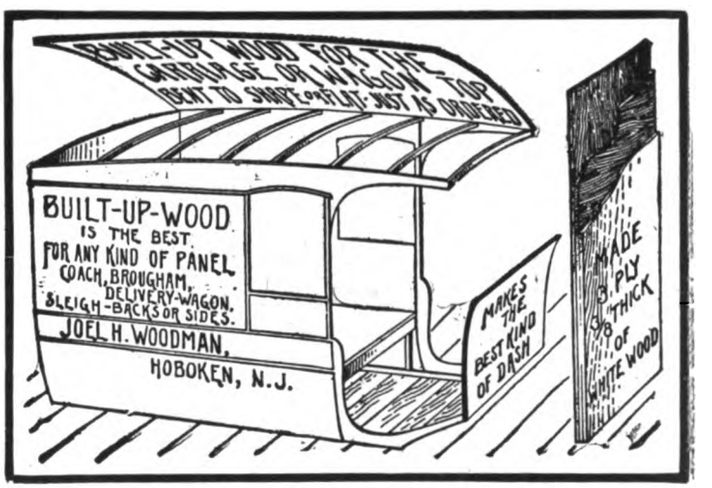
C. C. BRADLEY & SON, Syracuse, N. Y.



CLOSED

IF YOU WANT TO
KEEP POSTED
READ **THE HUB**

H. K. PORTER
BOLT
CLIPPERS
27 YEARS
27 YEARS
EVERETT, MASS., U.S.A.



Axles

A complete line of Wagon and Carriage Axles—Common, Concord, Farm Wagon, Half Patent, Long Distance, Collinge and Mail Patent. Empire Ball Bearing Axles. Made only by

SHELDON AXLE COMPANY, Wilkes-Barre, Pa.

The Best and Easiest Riding Springs, for both Light and Heavy Vehicles. We have had very great success with our Automobile Springs : : : : : :

Springs

Please mention "The Hub" when you write.

Digitized by Google



BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.

Nelson's Carriage Cleaning Compounds

Will interest you. Everything necessary to keep your stock new and trim.

Drab Broadcloth Cleaner.
Whipcord Cloth Cleaner.
Bedford Cord Cloth Cleaner.
Blue, Green & Maroon Cloth Cleaner & Color Restorers.
Stain Remover.
Steel Dry Cleaning or Teasel.
Silk and Satin Cleaner.
Rust Remover.
Lace Dye, Blue, Green and Maroon.
Lace Polish.
Black Hearse Curtains and Hammer Cloth Dye.
Morocco Stuffing.
Morocco Dressing, Blue, Green, Black and Maroon.
Top Stuffing.
Top Buffing or Dressing.
Tan Leather Cleaner.
Enamel Leather Cleaner.
Enamel Leather Finish, Black, Green, Blue and Red.
Moth Destroyer.

Top Dressing & Moth Destroyer

and many other articles every Vehicle Dealer should know about. Send for Catalogue telling how to use each article.

JEWEL MFG. CO.

914 Marshall Boulevard CHICAGO, ILL.

The Fairfield Rubber Co.

Manufacturers of Carriage Cloth, Imitation Leather, etc. For Automobiles and Carriages

Fairfield - - - Connecticut

Headquarters for "The H. D. Smith & Co.'s" Carriage and Wagon Forgings

JACOB GERHAB

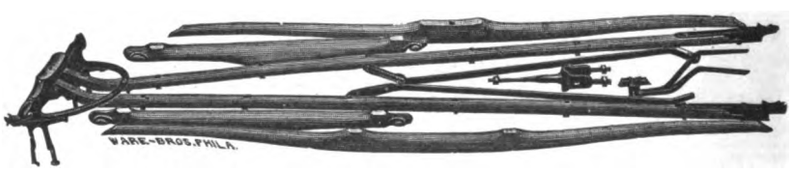
DEALER IN

Carriage Cloths, Leathers and Trimmings, Wagon and Cart Material

Salable prices and all information cheerfully furnished

158, 160, 162 and 164 North Third Street
PHILADELPHIA, PA.

"OLD RELIABLE"



IRONED-UP SETS COMPLETE AND ALL STYLES OF FINISHED

Gear Woods

The J. A. & D. P. COOPER CO. Struthers, Ohio

Digitized by Google

LION BRAND

T. P. HOWELL & CO. LEATHER ESTABLISHED 1840 NEWARK, N.J.

CARRIAGE AUTOMOBILE

AND

LEATHER

FOR CUSTOM AND WHOLESALE TRADE



"The King of Leather"

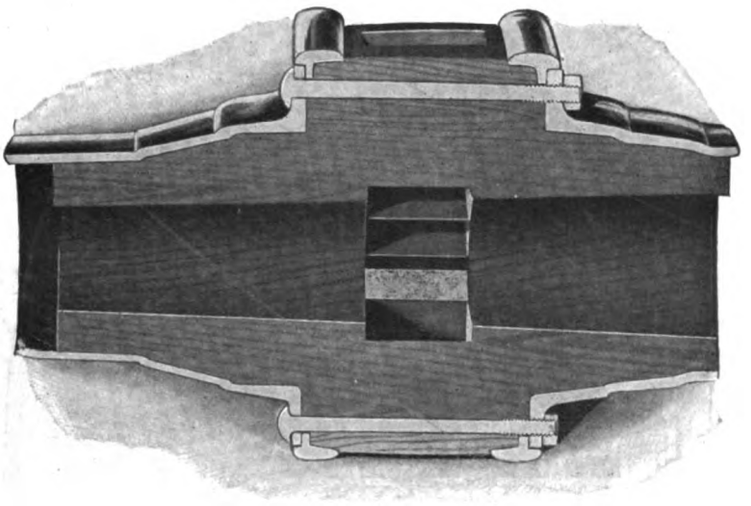
T. P. HOWELL & CO

NEWARK, N. J., U. S. A.

THE HUB. CURLEY

Digitized by Google

The American Wood Block Co., Delphos, O.



SECTIONAL VIEW.

Hub Blocks

Green—Air and Kiln Dried. Sold by grade or timber run. Compressed blocks or otherwise. 3 in. to 12 in. diameter. Stock kept up to standard quality and ready for shipment at all times.

GILLETTE'S

"IDEAL"

HUB

It stands the Racket

The **IDEAL** hub makes the strongest wheel. Repairs are less than on any other style; actual use has proven these facts.

IDEAL is metal protected, wood to wood center, means elasticity; simplicity of construction, easily and quickly repaired, driven spokes best of all, no metal to corrode.

IDEAL has the patented inverted flange that prevents lateral strain.

IDEAL means less tire resetting.

Try it—it is guaranteed.

We want the wheel makers to use the **IDEAL** in their wheels.

The American Wood Block Co.

DELPHOS, OHIO

HUB BLOCKS · HUBS · DIMENSION STOCK



The best buggies for the money on the market

The "World" Line

THIS splendid line of medium grade work grows in favor with the trade every year. This year it is just a little better than ever before. The cut shown above of our new twin auto-seat buggy with quick shifting device for removing top is a great seller

SEND FOR CATALOG

Studebaker

Brothers Manufacturing Co.
South Bend, Indiana, U. S. A.

HOTEL CUMBERLAND

NEW YORK

Southwest Cor. Broadway at Fifty-fourth St.

Near 50th St. Subway and 53d St. Elevated Stations and accessible to all surface lines.



Headquarters for Carriage and Automobile Trade

Ideal Location, Near Theatres, Shops and Central Park.

NEW AND FIREPROOF

STRICTLY FIRST-CLASS

All Outside Rooms. No Carpets. All Hardwood Floors and Oriental Rugs.

Ten Minutes Walk to Twenty Theatres.

Transient Rates, **$2.50** with Bath, and up.

Restaurant Unexcelled. Prices Reasonable.

SEND FOR BOOKLET.

HARRY P. STIMSON, *Formerly with Hotel Imperial.*

R. J. BINGHAM, *Formerly with Hotel Woodward.*

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES } **C. T. RAYNOLDS & CO'S** { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES }

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

Bimel-Ashcroft Manufacturing Company

Main Office, POPLAR BLUFF, MO.

Factories:
POPLAR BLUFF, MO.
MOREHOUSE, MO.
DERMOTT, ARK.
LOUISVILLE, MISS.

Foreign Correspondence Solicited.

SPOKES

OUR GROWTH

1902—1,310,241 Spokes

1903—3,240,185 Spokes

1904—5,485,748 Spokes

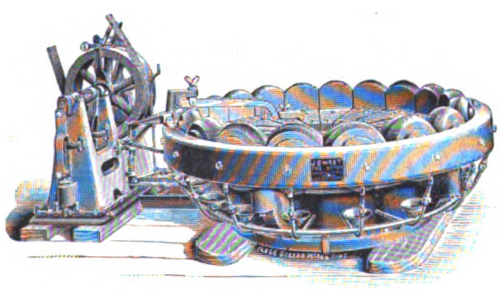
1905—7,845,653 Spokes

1906—7,927,759 Spokes

1907—7,748,839 Spokes

Our New Plant Increases Our Capacity to 12,000,000 Spokes

THE FIRST TIRE SETTER



you ever heard of was a **"WEST"**—probably, for they were on the market several years before any other and you are hearing more about them every year. Many of the older users are loudest in their praise. That's because they stand the test of time—they're made that way. Some of our Hydraulic machines have been **in use fourteen years** and are doing as good work now as when first installed. **Now,** we don't claim our machines are best simply because they have been longest on the market, **but because** we have been making a study of cold tire setting all these years and improving our machines as experience and observation taught us, and when you buy a **"West Hydraulic"** you get the benefit of this experience. Some people knowing **our** machines would set tires cold satisfactorily, thought some other would do as well—and the price was cheap—also machine. Now they wish they had bought a **"West Hydraulic."** **If you make a similar mistake it's your own fault.**

Buy a **"West Hydraulic"** and be happy. Hand or Power machines.

THE WEST TIRE SETTER COMPANY, Rochester, N. Y.

Digitized by Google

No. 502 Rail With Handles, Welded Solid

JAPANNED

No. 602, Same, NICKEL

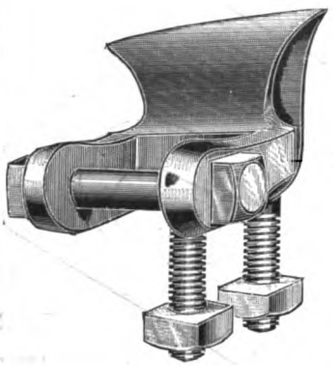
Nickel Plating Over Copper Will Not Rust. Japan Baked On With 300° Heat

McKinnon Dash Company

Buffalo N. Y.

Cincinnati, Ohio
Troy, Ohio

St. Catharines
Ontario



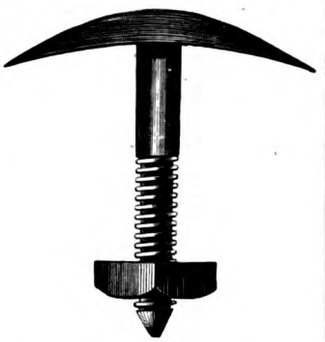
Skewed Shaft Couplings

Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips 5/8 or 3/4 width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

1908 Catalog "H" on application.

COLUMBUS BOLT WORKS, Columbus, O.



Kokomo Solid Rubber Tires

¶ In rubber substance the Kokomo Solid Rubber Vehicle Tire is truly **SOLID.**

¶ Solid with the pure stock that has made them an exception to the ordinary tires of commerce.

¶ In Kokomo quality there is an established standard that is recognized as the highest ideal of tire construction. The Kokomo is a standard tire in every respect.

¶ Kokomo Tires always score in the running, and the longer the test the more convincing the results.

Kokomo Rubber Company

Kokomo, Indiana, U. S. A.

Digitized by Google

The Hub



THE HUB extends the compliments of the season to its readers and patrons. Each day throws new light on the canvas of the times. Confidence is abroad—prosperity is circulating everywhere. United effort means success. Prosperity, like the pebble dropped in the pool, works from the center. As prosperity must start at the hub, let all lend a hand in giving the wheel the momentum that will make itself felt to the very limits of the circle.

Oldest Carriage Journal in the World

1858 1908

Vol. L. No. 9

DECEMBER, 1908

Digitized by Google

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

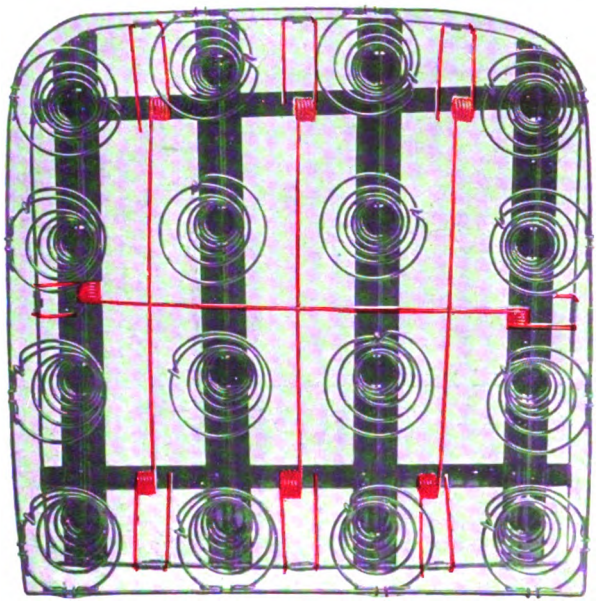
SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

ROYAL ARCH AUXILIARY SPRINGS



Soft Face Construction. Patented.

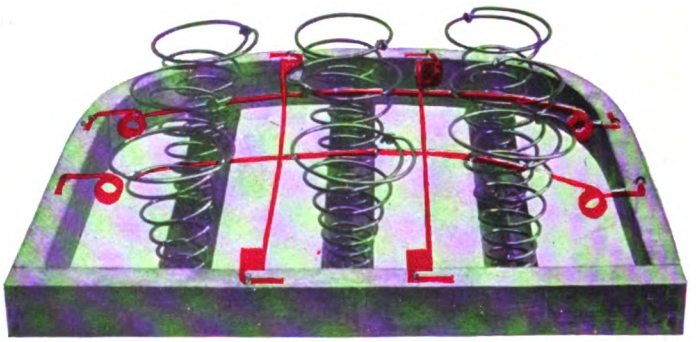
Auxiliary Spring & Ventilating Button Co.

DETROIT, MICH.

ROYAL ARCH AUXILIARY SPRINGS prevent the complete depression of the coiled springs, relieve the coils of the severe shocks, and greatly lengthen the life of the cushion. A cushion with Royal Arch Springs will never sag, and

FORTIFIES THE RIDER AGAINST THAT SUDDEN UNEXPECTED JAR

Will cost no more than the common construction. Why? Write us.



Wood Frame Construction. Patented.



CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

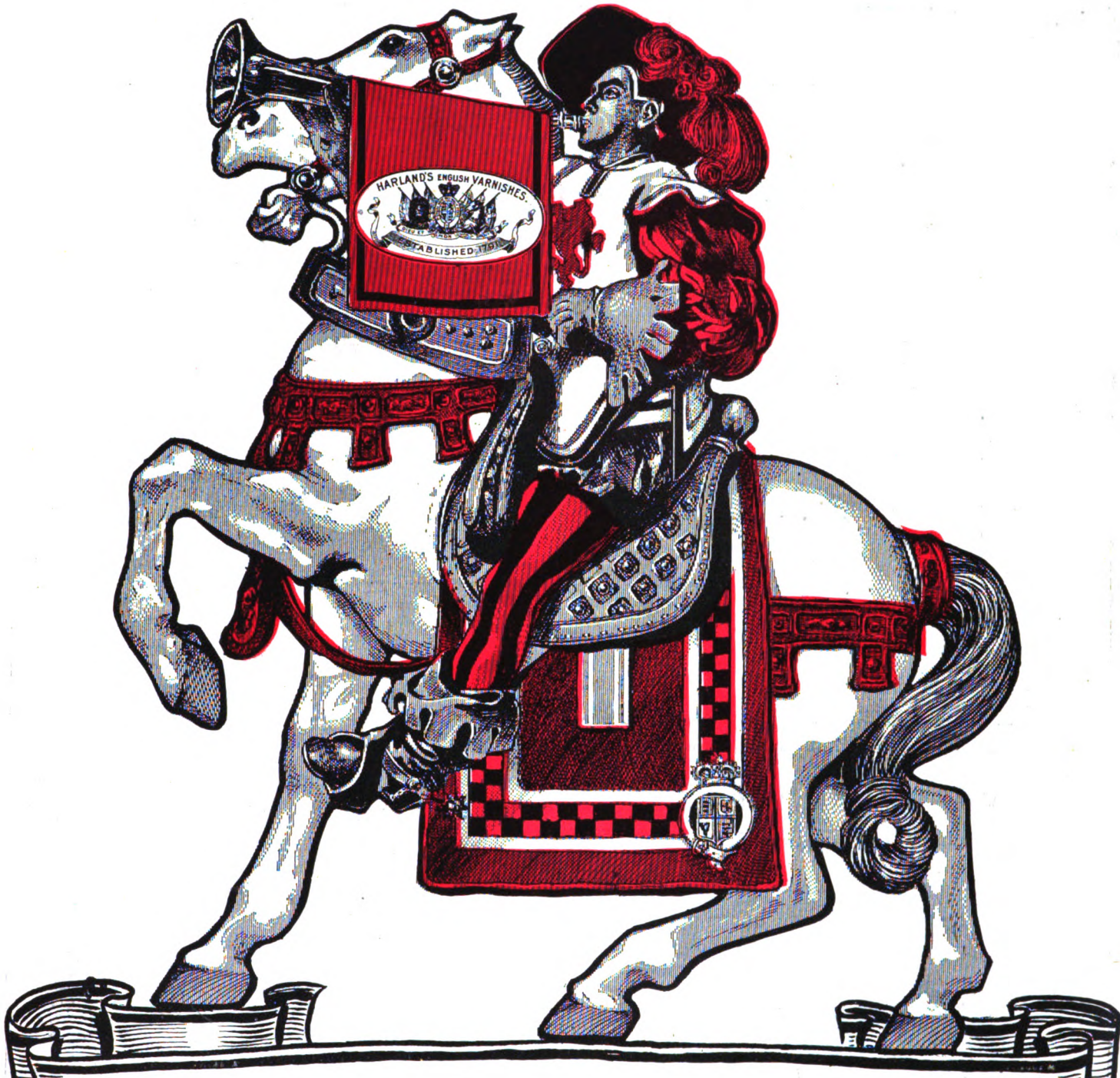
Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google



The renown of Harland's English Varnish has been heralded to every part of the world, and its sterling merit recognized by all vehicle builders who desire strictly high-grade varnish. Quality is our slogan, and it is our unsurpassed quality which has given our varnishes a universally pre-eminent position and made them the standard with which all others are compared.

For the Best Wearing, Lasting and Most Beautiful Finish, Use

HARLAND'S ENGLISH VARNISH

It's the cheapest in the end.

WM. HARLAND & SON

FACTORIES:
Merton, London S. W., England

AMERICAN HEADQUARTERS:
168 Center St., New York
General Manager for United States and Canada, H. HAGGER

WESTERN MANAGER: C. W. SCHOOLEY
40 Dearborn St., Chicago

Digitized by Google

JOHN W. MASURY & SON

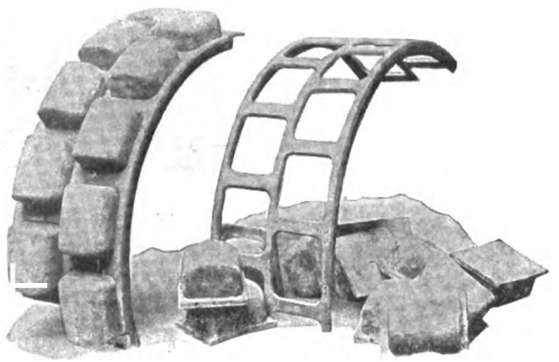
MANUFACTURERS OF

Superfine Coach Colors and Varnishes

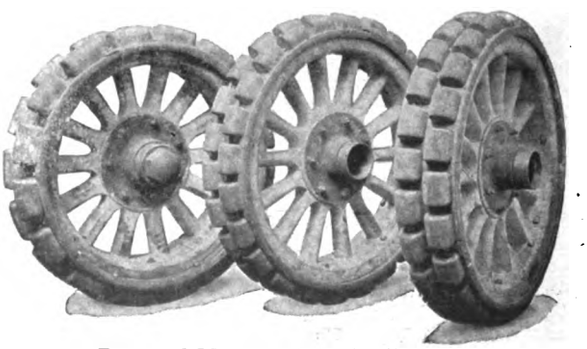
NEW YORK——AND——CHICAGO

SOLVED! Is the way the motor car experts express themselves on the subject of tires for commercial motor vehicles after seeing and using the :: :: :: :: :: :: ::

KELLY-SPRINGFIELD SECTIONAL TIRE



Double or Single Track. Sectional View of Double Track.



Patented May 17, 1898; April 9, 1901.

With a grip on the road that means progress and security from the fault of solid tires—that of crowding the rubber ahead under load, which means disintegration—the motor wagon and truck owner will find in the Kelly-Springfield Sectional Tires the best tire for all heavy cars. Each section is dependent upon itself. If interested, write

Consolidated Rubber Tire Company

NEW YORK, N. Y.—and—AKRON, OHIO

Branches—BOSTON CHICAGO PHILADELPHIA ST. LOUIS DETROIT CINCINNATI SAN FRANCISCO

Digitized by Google

TRADE MARK

GOODRICH TIRES

FIFTEEN YEARS good is an inviting sort of reputation, but present worth is our immediate argument. We ask you to buy GOODRICH SOLID RUBBER TIRES for the service that you or your customer can get out of them **to-day.**

A service that has been successful for a long term of years—a service that is based upon a manufacturing policy which insists on **holding up the grade.** Always the same—always the best.

THE B. F. GOODRICH COMPANY

AKRON, OHIO

Chicago: 24 E. Lake St.
Philadelphia: 1332 Arch St.
Boston: 161 Columbus Av.
Detroit: 266 Jefferson Av.
Cleveland: 2188 9th St. S. E.
St. Louis: 3926-28 Olive St.
Denver: 1422-24 Court Pl.
Kansas City: 1728 Grand Av.
London: 7 Snow Hill, E. C.
Paris, 2 Rue Brunel, Avenue de la Grande Armee.

Our products are also handled in

New York: 66-68 Reade St.
Buffalo: 731 Main St.
By The B. F. GOODRICH COMPANY, of New York.

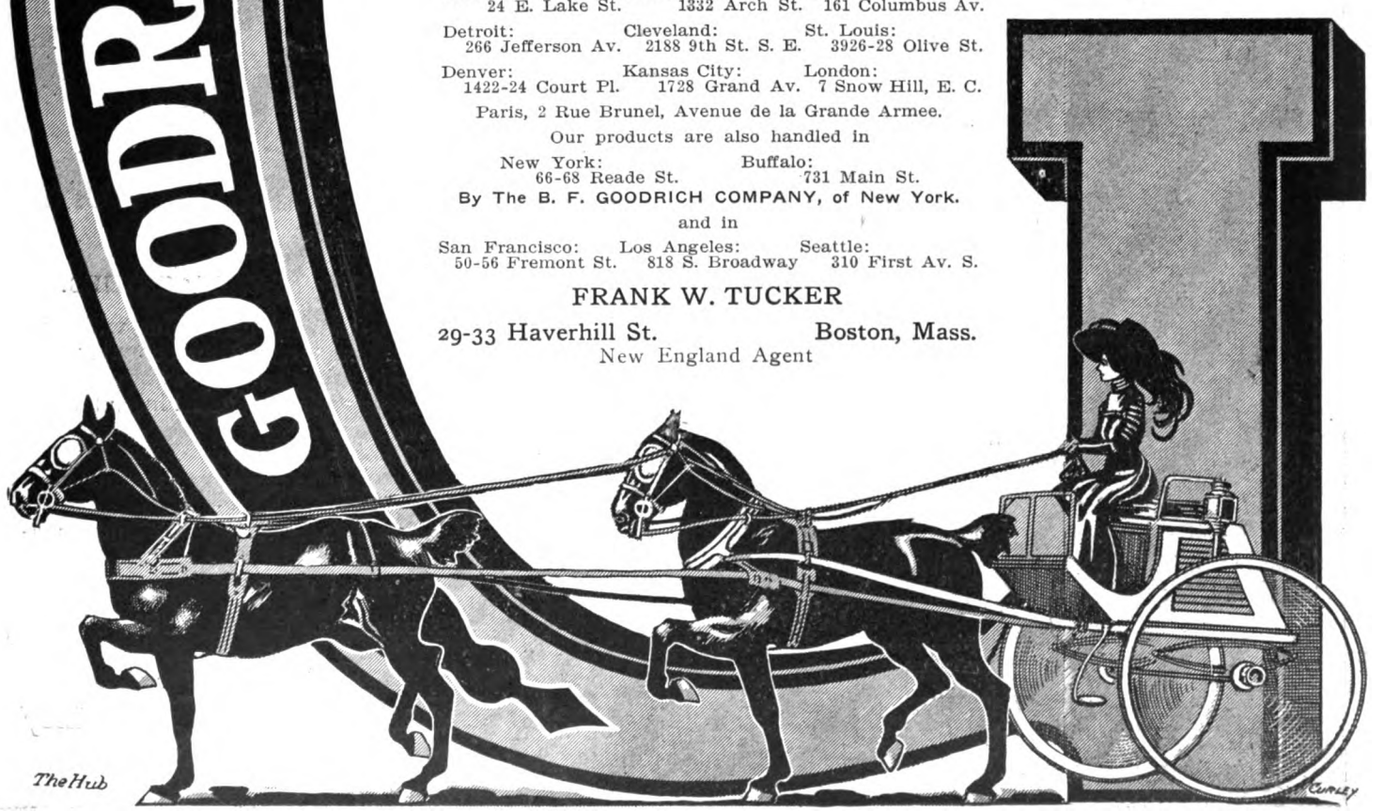
and in

San Francisco: 50-56 Fremont St.
Los Angeles: 818 S. Broadway
Seattle: 310 First Av. S.

FRANK W. TUCKER

29-33 Haverhill St. Boston, Mass.

New England Agent



Digitized by Google

Varnishes—Colors

All that is good and durable in Varnishes

TRADE VALENTINES VARNISH MARK

Everything that is desirable and lasting in Colors

Varnishes—Colors

MERITAS

CARRIAGE ENAMELED OIL CLOTH



In Winter as well as Summer—weather has no effect upon MERITAS.—Guaranteed.

Standard Oil Cloth Co.

320 Broadway, NEW YORK.

EXCEPTIONAL BARGAIN.

FOR SALE

Wheel Making Machinery

Manufactured by

The Defiance Machine Works

Defiance, Ohio

MAJORITY BRAND NEW MACHINES.

One improved double equalizing machine with two saws, 20-in. diameter, belt and counter.
One improved wheel boring and screwing machine.
One patent double drum felloe polishing machine with counter.
One improved hub polishing machine.
One double automatic tread sanding machine with counter.
One improved adjustable arm belt polishing machine.
One heavy sarven wheel riveting stand.

Machines erected in New York City.

Apply to

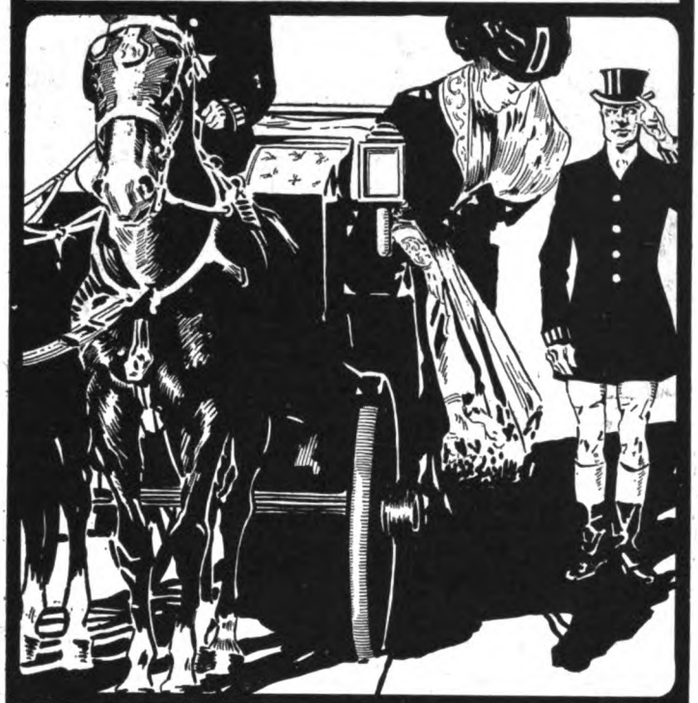
The G-L Economizer Company

1412 Times Bldg., New York

Please mention "The Hub" when you write.

Digitized by Google

STEIN DOUBLE CUSHION TIRE





Perfection

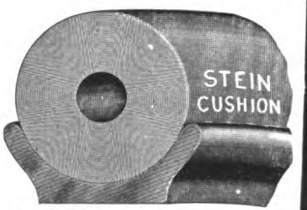
in a rubber tire is not to be judged by its shape or manner of application, but by its rubber properties and wearing qualities.

STEIN DOUBLE CUSHION TIRES

ARE LONG ON RUBBER AND WEAR.

Don't take our word for it. Your own practical experience has acquainted you with a knowledge of rubber tires.

Apply a set of **Stein Double Cushion Tires**, and when they have proved their superior qualities, which they will, you will be enlisted as one of our regular patrons. For wear and tear, they are always there.



STEIN DOUBLE CUSHION TIRE
Akron Ohio

Taxicab Hardware

¶ "Public Service" jobs receive the hardest usage of all vehicles. They should be plain —strong—durable.

¶ We have brought out a number of new items for **Taxicabs** — Flappers, Pillar Hinges, Top Fasteners, etc.—all made of the best and strongest materials for their intended use.

¶ Taxicab Hardware is simply modified Landau Hardware. We have been making Landau goods for forty years—and we know what weak points to guard against and what to anticipate in wear and tear.

¶ **Insist** that E & M Hardware be used on **your Taxicabs.** Our catalogue shows a full line.

The English & Mersick Co.

New Haven, Conn.

81 Years' Experience in Every Can

E.S. 1827 &CO.

Edward Smith & Co.

CARRIAGE VARNISHES

Everything from the
Bare Wood to the Finishing Coat.

CHICAGO **NEW YORK**

WING RUBBER CARRIAGE TIRES



are made from tough, durable, lively New Rubber. QUALITY is the first consideration. Our "Wing" Tire will outwear several ordinary rubber tires. The wings (see cut) keep water, sand and grit from working between the channel and the tire, to wear out the tire from underneath. Write for particulars.

GOOD YEAR AKRON, OHIO
TRADE MARK.

The Goodyear Tire & Rubber Co.
Carriage Tire Dept.
Akron, Ohio

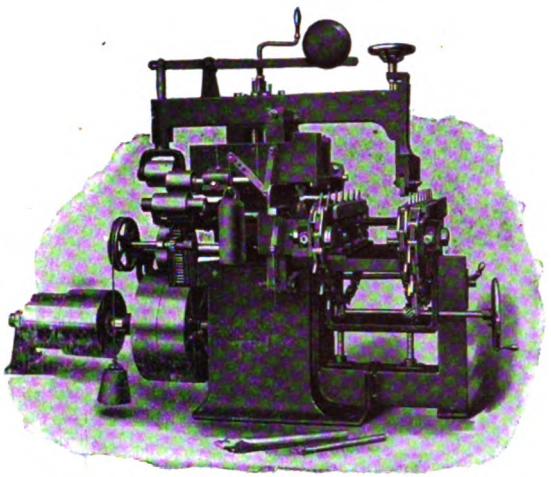
BRANCHES: Boston, New York, Buffalo, Chicago, Cincinnati, Detroit, St. Louis, Denver, Los Angeles, San Francisco.

Digitized by Google

HAMILTON-OHIO-LINE WOOD WORKING TOOLS

For Automobile Body and Wheel Work.

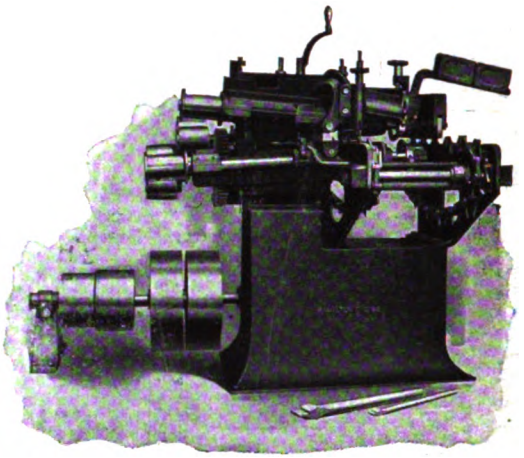
Carriage, Wagon, Hub, Spoke, Rim and Wheel Factories



Hamilton Spoke Tenoning and Mitering Machine No. 298



Hamilton Dowel Borer No. 315.



Hamilton Automatic Spoke Throating Machine No. 299

Disk Sanders, Belt Sanders, Spoke Sanders, Wheel Sanders, Gear Shapers, Scroll Eyeing Machines, Gear Rounders, Spring-Bar Boring Machines, Seat-Back Benders, Rim Planers, Rim Rounders, Rim Borers, Rim Cut-Off Machines, Wheel Boring & Screw Driving Machines, Spoke Lathes, Spoke Cut-Off Saws, Spoke Tenoning and Mitering Machines, Spoke Throaters, Spoke Facers, Wheel Facers, Wheel Tenoners, Hub Lathes, Hub Mortisers, Hub Borers, Wheel Boxers, Wheel Presses, Tire Truers, Tire Bolters, Spoke Cut-off Machines, Band Saws, Rip and Cross-cut Saws, Planers, Matchers, Moulders, Shapers, Boring Machines, Universal Wood Workers, etc., etc., etc.

THE BENTEL & MARGEDANT CO., Hamilton, Ohio, U. S. A.

C. A. WILLEY COMPANY

Color Grinders

AND MANUFACTURERS OF

SPECIALTIES IN CARRIAGE and CAR PAINTS, COLORS, Etc.

WILLEY'S SUPERFINE C COACH R SPECIALTIES COLORS TRADE MARK

92d St. Cars at Hunter's Point Ferry Pass our Factory.

Hunter's Point, New York City

CALL AND SEE US WHEN IN NEW YORK.

Digitized by Google

The Hub

Copyright, 1908, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. L. NEW YORK, DECEMBER, 1908. No. 9.

THE TRADE NEWS PUBLISHING CO. OF N. Y.
Publishers of THE HUB

J. H. Wright, *President.* G. A. Tanner, *Secretary and Treasurer.*
24-26 MURRAY STREET, NEW YORK.

Jacob H. Klein, *Technical Editor.*

REPRESENTATIVES:

J. Henry Klunk. J. G. Tanner. B. H. Hull.

The Hub is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of Trade News Publishing Co.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

France.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

Germany.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

England.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

Local Associations.

The resolution passed a few years ago favoring the organization of local carriage associations, which would be accorded representation, one for each fifty members, was a sensible and just one. To what extent it has stimulated the formation of local association does not appear. There are those who think that the C. B. N. A. would possess greater power and influence if it were made up more largely of representatives of such local associations. There are many who, while gladly welcoming the formation of locals and their delegates, yet incline to the opinion that the voluntary character of the membership is more productive of social intercourse than a largely representative body would be.

If there were quite a number of such local associations the representation through delegates would more likely change each year, and the C. B. N. A. membership would be largely strangers. But as it is, the same faces are seen at succeeding conventions, and a spirit of comradeship develops which is the strong bond that holds the association together.

And besides, the C. B. N. A. was not originally designed for business, though it has grappled with many business propositions that have crossed its pathway. Its aim and purpose is distinctly social. That is the secret of its cohesiveness. It will always remain what it is, an organization of men in the same calling, feeling an interest in each other's welfare.

Local associations ought to multiply. They do good wherever they exist. Several have been added within two or three years. Organization is now contemplated in towns and cities where builders barely know each other. Membership is increasing and social features predominate as they should. The Cincinnati association leads all others in numbers, vitality and in accomplishments. Other building centers can have lesser associations where sociability will blossom and convert the members into genial and congenial brothers, whose interest is each other's welfare.

Square Deal.

The "Square Deal" has taken possession of a very large part of the business world. It crops out in pure food legislation, in the reorganization of the credit system, in the insistance on quality, in the one-price system, in discouraging the cutting of prices and in the general drift to honorable and upright business methods. We hear of standardization as to grades and qualities. We read of competition wherein the competition is directed to furnishing the best goods for a given price. We read of the gradual elimination of more or less questionable or dishonest business methods and of means taken to weed out those who are not qualified to stand between manufacturer and consumer.

A higher business morality is establishing itself or is being established, the object of which is to give as much for a dollar rather than the least. Honesty is being inculcated as a matter of business. These upliftings are the product of our wide education and are the fruits of our broadening civilization which recognizes that only as we are square with our fellow men without compulsion can we succeed most and best.

Let Us Hope.

When our iron ore is all smelted, our forests all denuded, our coal beds all exhausted and our rubber regions tapped to death, where will carriage builders obtain their iron, steel, timber and leather with which to build carriages? Limits of duration have been assigned to each of these supplies and nothing appears in sight to take their place. The condition on its surface is serious enough, but somehow the people of the world and the manufacturers whose business depends upon the continuity of supplies of these raw materials are taking the matter philosophically.

There are signs of partial relief. An inventive process has been discovered by which textile goods of remarkable durability and great attractiveness can be produced at greatly reduced cost over present textiles. A process has been discovered by which coal can be economically converted into a fuel that will give a greater heat and for a longer time. An inventor is to-day utilizing the rays of the sun to generate heat for commercial purposes. Electricians are working on schemes to conduct power immense distances from the waterfalls and their predictions are entitled to a place beside Arabian Night stories. Schemes for utilizing the tides are being worked out along lines which their inventors think will solve the

Digitized by Google

problem of power wherever tidal power is available. The cotton planters are discovering wonderful recuperative agencies for exhausted soils in the cow-pea, which will come in handy when the fertilizing stocks are exhausted.

If some of these people would only find something to take the place of hickory, the carriage builders would rise up and bless them. If they can fix us up on the hickory proposition they can certainly help out the wagon builders with the lumber they need and they will add their blessings.

In our reading some time ago an estimate was encountered of the number of horse-power contained in every cubic foot of ethereal space. Just how the philosopher, whoever he was, did his figuring is not recalled, but the assurance was unreservedly given that the interplanetary spaces are full of uncypherable energy. Let us hope the philosophers who give their assent to these statements know what they are writing about and that some future Edison or Tesla will show up who will tap the supply.

The Younger Builders.

During the past ten years a galaxy of young carriage builders has come to the front, taking the place of those who stepped down from their busy life's work. These younger men who to-day are leading the industry up to greater accomplishments are the equals of those who have gone before them in all that pertains to carriage construction and their superiors in grasp and commercial insight. They were born under different environments. They were schooled in a different school. They had the advantage of standing on a foundation built by the experience and struggles of their predecessors.

The younger men have made the most of their opportunities. They lost nothing that the lives of those behind them taught. They put their shoulders to the wheel and used their energies to the further building up of our great industry. They are successfully addressing themselves to the problem that the automobile has brought to their notice and they will prove by their energy, foresight and wisdom that they are the worthy successors of worthy sires.

In Its Infancy.

The use of electrical appliances in carriage plants has made considerable headway during the past few years, and promises to make more. The respective economies of steam and the electric current are still matters of discussion, even setting aside the cost of original installation. Our observations, which have extended over work in shops using the current in restricted form with steam operated plants do not yield sufficiently practical conclusions to warrant taking sides.

Wonderful as have been the developments, the fact remains that greater perfection in the application of the current must be reached before it can expect general adoption. Wires and motors are still mysterious. Electrical science is in its infancy. More work has to be done in, for and by it before our shops can fully profit by it to the extent that its power and adaptability warrant us in anticipating.

Preparing Lumber.

The matter of drying lumber or timber preparatory to use has not until a comparatively recent date been subjected to what might be termed scientific methods of procedure. "Rule of thumb" methods have prevailed, and air drying processes have always been supposed, and not without some reason, to be the best method. But air drying is subject to variations of temperature and variations of conditions which microscopically effect the product and in a way that does not become visually apparent.

Carriage builders of long experience can readily recall the numerous attempts made at artificial drying which were guaranteed to do as well as air drying. They can also recall the occasionally perverse action of even simon-pure air dried methods. So it has been with leather, and its old-time and new-fangled processes.

It has been all along claimed that there was nothing mechanically or chemically impossible in kiln-dried methods, but those methods were strewn with failure. It is no doubt theoretically and practically possible to artificially stimulate drying by kiln-dried methods without robbing the material of its tensile strength or interfering with the normal course of the fibers in the wood. Science will never rest content until the last vestige of doubt is removed as to the value of forced drying.

Tendency to Better Work.

It is gratifying to observe a tendency to improve the grade of cheap and medium vehicles. There is a temptation in times like these to make up for increasing cost of material and for a bad year. The better class of dealers are finding it to their interest to sell good work. Their trade is demanding it, especially in old-settled communities. Certain lines of inferior work are still selling in many new sections, but even here the makers of high-grade work are discovering that by proper effort they can hold their own.

As to whether manufacturers will be able to get a price to correspond with their better work, only the coming season can tell. There is not a pronounced unanimity on the best course to pursue. There is even danger that the effort to shorten dates and lessen discounts will not have a fair chance. Conditions must first materially improve before any definite policy can be pursued. Dealers will buy and sell what they can sell to best advantage and at the best profit. Manufacturers will need no prodding to do the best thing for themselves when they face the opportunity to right themselves. Poor and cheap work has a less chance to hold its place in the trade than ever.

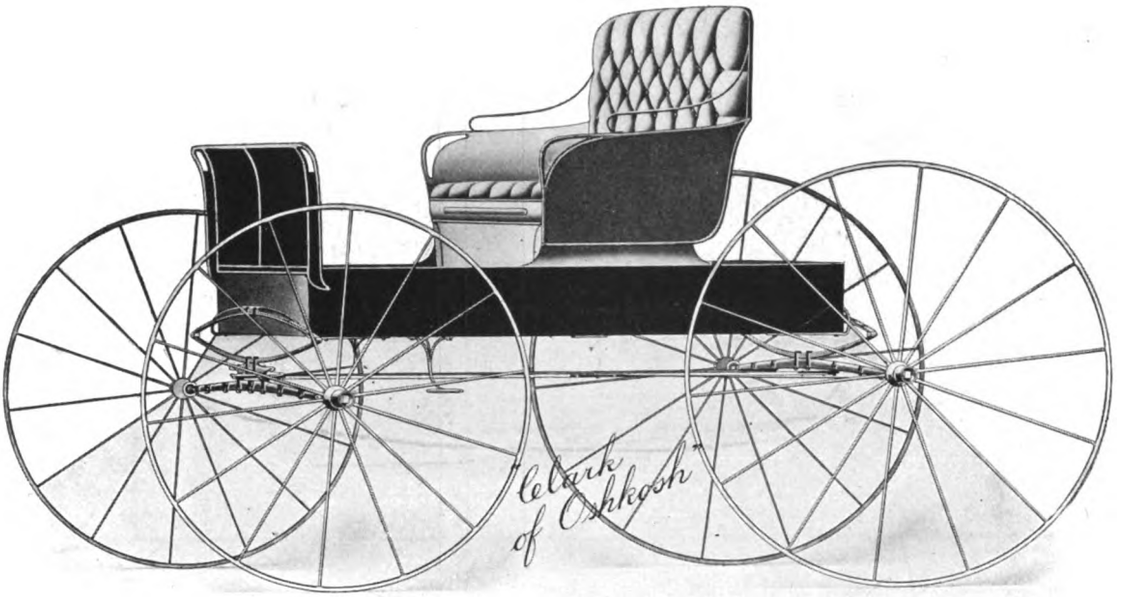
Branches.

It is to be observed that quite a number of carriage builders have established agencies in more or less remote localities, where conditions seemed to warrant such action. This is an encouraging sign both of individual enterprise and improving business. These manufacturers have concluded that branch houses will do more good than traveling salesmen who are there to-day and gone to-morrow. There are dealers enough in any given locality to take care of the local trade, but the advantage of having a line of work persistently represented by one owing single allegiance to one name is regarded as sufficient to warrant the expense of branches.

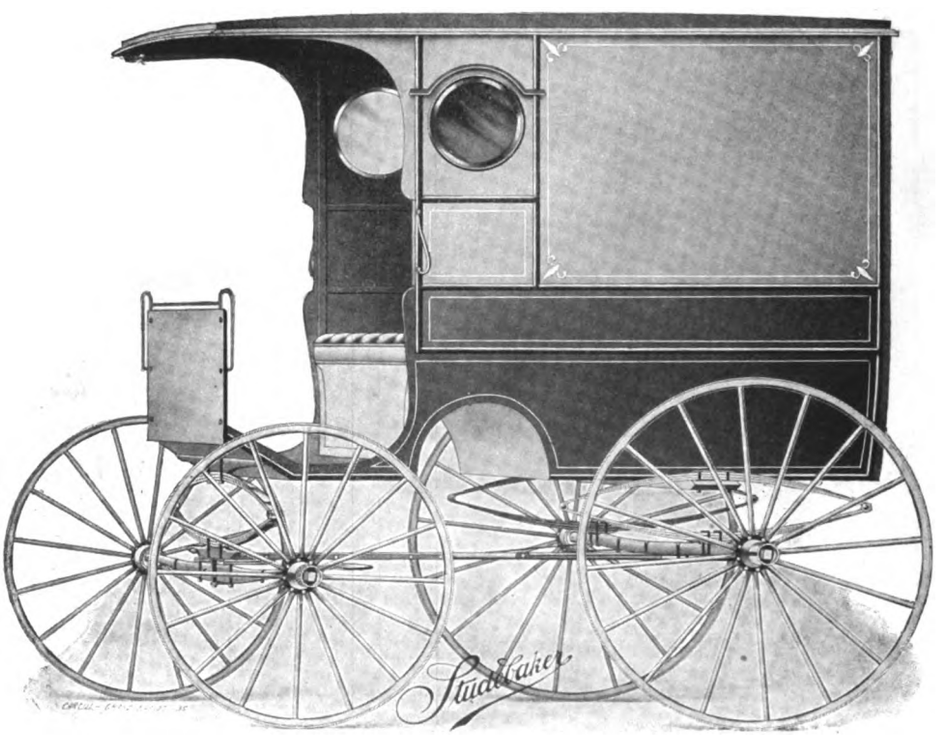
The builders of light vehicles and, in some instances, heavy wagons, such as dump wagons, are giving more attention to short-turn gears. More short-turn gear wagons are being made than ever, and the number in proportion to other vehicles, is rapidly increasing. It means lower suspension and all that lower suspension involves. The rush of horse-drawn traffic in our crowded and too narrow city and town streets calls for quick action, turning in the shortest compass and with the least strain on horses and harness. Short turn gears are having the call.

Digitized by Google

Illustrated Carriage Section, December, 1908

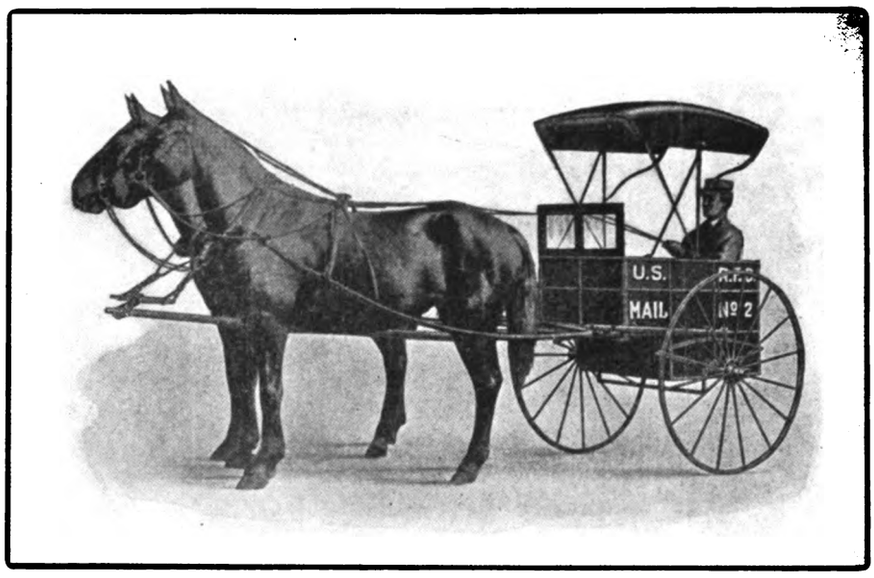


Gentlemen's Driving Wagon with Deep Seat.
Built by J. L. Clark, Oshkosh, Wis.



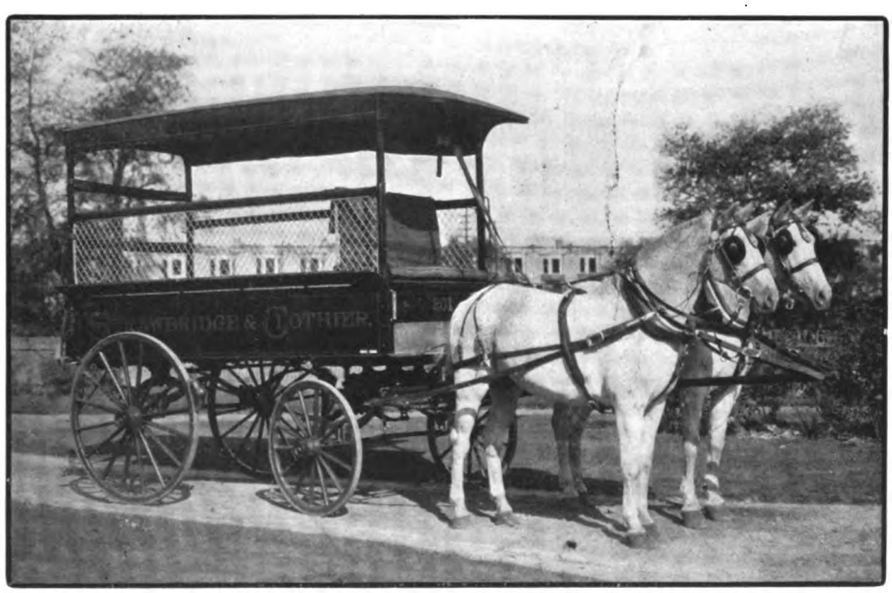
Three-Spring Cutunder Delivery Wagon.
Built by Studebaker Bros. Mfg. Co., South Bend, Ind.

Digitized by Google



Rural Free Delivery Mail Cart.

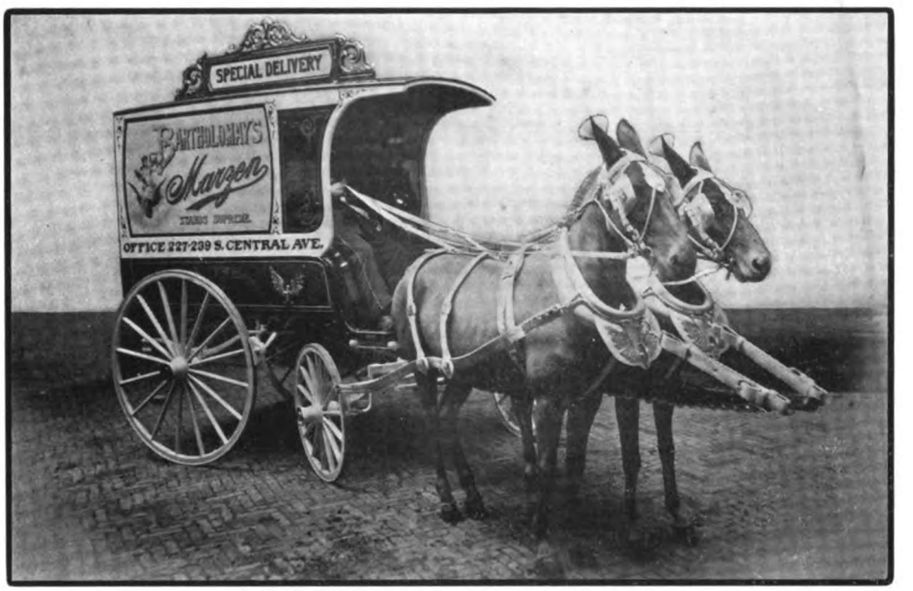
Built by A. F. Sargent & Co., Geneseo, Ill.



Philadelphia Platform Delivery Wagon.

With Stationary Top and Open Sides.

Digitized by Google

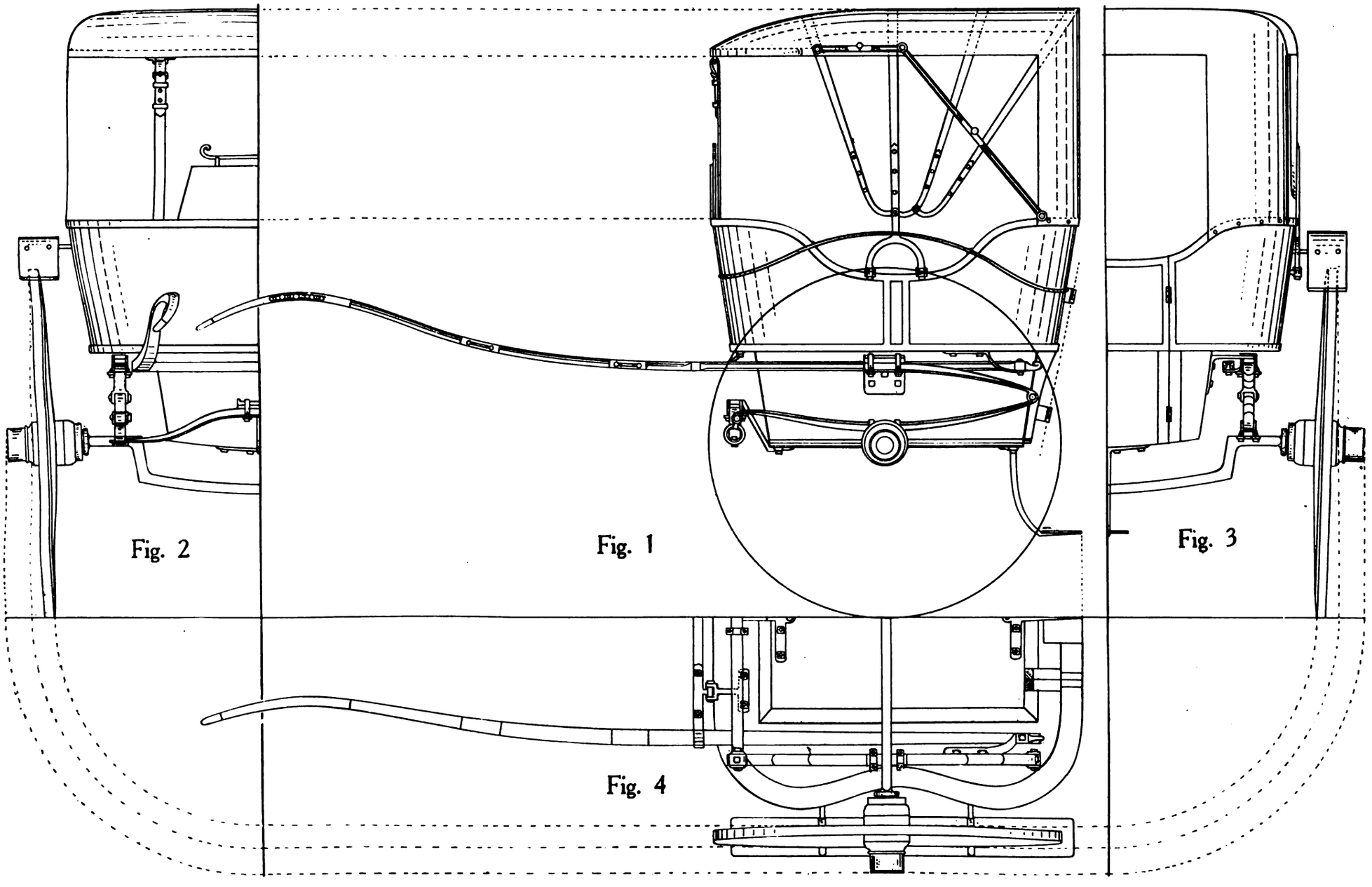


Fancy Platform Business Wagon.
This Elaborate Mule Harness is White.



Baltimore Covered Merchandise Truck.
Harness is Covered with Elk's Skin.

Digitized by Google



Working Draft of Governess Car with Canopy Head.

Scale, ¾ inch to the foot.

Described on opposite page.

Digitized by Google

Wood-working and Smithing

DESCRIPTION OF WORKING DRAFT OF GOVERNESS CAR WITH CANOPY HEAD.

Drawing on opposite page.

This natty little two-wheeler has become so popular that the largest firms now stock them as freely as they do the heavier class of work, for which they have a principal call.

The governess car is usually built on very elementary methods of construction, but as it has now made such inroads in making itself so necessary in a gentleman's establishment, the restriction as to cost is somewhat brushed aside, because the car is now used more generally, and is not confined to family uses, which its name so signally implies.

So that a new licence has, with the growth of the car's wider use, been given as a mandate from the carriage using public, to invest it with a wider field of importance in catering to general wants, which have hitherto been supplied by the stylish dog-cart and similar two and four-wheeled carriages.

The desigr herewith is an adaptation of the King of Belgium motor body seat to the uses of a governess car. Such an innovation is much more in order in this vehicle than in the lighter class of four-wheeled work of the stanhope type. The design is peculiarly suitable to a governess car, because it supplies in a striking degree, the position of comfort wanting in a straight body. The sides are framed and panelled, the panels being secured to the framing and the moulding nailed on, or the panels can be made of aluminum and the moulding also nailed on. The sides may also be of ¾ in. stuff, and bent conically in the corners by the timber bender, to suit the bevel of the back, and dressed up to the outward rail of the side, and the moulding nailed. This latter method is by far the best, because it dispenses with the great expense of framing and panelling, which is a source of cost, whether it is carried out in wood or metal, as in motor body work. The solid sides are half lapped to a center pillar, and the moulding worked up. The cost of framing and panelling is absorbed in the heavy figures that motor cars run to, while in a governess car a high price is prohibitive, unless it is clear to the buyer that the design and general fittings to carry out a necessary and specific purpose are conspicuously evident. And this is what is being sought to convey in the design of which we give a working draft here. The extra cost is justified by the expense of canopy fittings and in carrying out the constructional design of the body.

The hanging is on simple yet smart and effective principles. The shafts are fitted up with fulcrum bearings and relief springs behind, which is the truest method of fixing shafts to two-wheeled carriages. The springs are three-quarter elliptic, with cross spring, which is both a strong and smart method of suspending a carriage of this kind, and is also economical.

The elbow spring is clipped to a stay plate, which is bolted to the body side, an inner plate taking the bolt heads, while the cross spring is fixed to a center stay.

The canopy head is of special construction; its standard power is at the center slat stay, which is made with forked side and bolted to a double socket stay, which is fixed to the inside of the body side, as explained in the elevation drawing. The head is fitted up with bent bows, which are fixed to the hinge feet of the standard stay. A bow is fixed horizontally to the front head slat bow with a swivel boss eye joint, which works on an inside quarter inch rod, fixed to the inside of the bow, as is used in some motor car canopy tops, and which have been explained in drawings on canopy top fittings in recent issues of The Hub.

To give a stretched firmness to the head, side joints are fitted to it, as well as short front joints, to complete the steadiness and hold the covering at a stretched tightness.

The style and original lines of construction as set forth in the sectional drawings, together with the canopy and its fittings, make a very smart design, and one that would stand well in th public favor if it were brought prominently to the front.

Fig. 1 gives the elevation of the car in its entirety. Fig. 2 shows the half front view, from which the widths of shafts and their bearings can be taken, the position of cross spring and width on axle, the position of wings, front dash and the fittings to hold the front of the canopy head firmly to the body.

Fig. 3 gives the hind half view, which shows the design of the back of body and the size of door and style of its framing. The standing pillars of the quarters are made to stand fully from the bottom quarters, and show a moulding on the seat quarter. The seat panel is grooved into this pillar, while the top rail of the seat is half lapped to it. The bottom quarter panel is grooved at the top into the bottom of the seat, and mitred to the side, as in a wagonette body, while the standing pillar is got out wide enough to be boxed down ⅜ in. to make a bearing for the panel, leaving the widths of the pillars to stand up, as in Fig. 3.

The widths of body and its clearance from top of axle can be got from this section, also the depth of the seats, their shape down to the top line of the door; the height of step and body from ground, and the position of side fittings for the springs, as well as the sizes of the body at its various widths and projections.

Fig. 4 gives the half plan of body and gearing complete. The plan of the seats and the method of drawing in their proportionate curvature are clearly shown, and the King of Belgium lines of the seats are clearly defined. This method of designing the seats make a provision against the top of the wheel catching the body side, as the result of side motion, while the four corner seats are individualized and can be used with far greater comfort than those in a straight bodied car. The design offers a broad originality both in elevation and constructional smartness quite new to the trade, though the adaptation of this style of seat to the governess car, in common with its use on other light four-wheeled carriages, is not new. Still the design we offer in our working draft possesses points in style and general construction not hitherto worked out in the trade, nor brought before the notice of buyers. For this reason it will be an acceptable contrasting design to what has hitherto obtained.

The dimensions are: Length of body on rocker bottomside, 32 in., beyond which the door pillars project; length on seat line, 36 in.; length of seat over mouldings, 42 in.; at top, 47 in.; depth of rocker, 11½ in. Depth of seat panels over mouldings at corners, 17 in.; depth at centre, 10 in. Height of canopy head from seat, 43 in. Width of body on rockers at bottom, 24 in.; on top, 27 in. Width over seats, 44 in. Width on top over mouldings, 49 in. Width of door, 16 in. Length of dash, 30 in. by 7 in. deep.

Height of wheels, 45 in.; tires, India rubber, 1¼ in.; spokes, 1½ in.; other sizes to Warner standard. Length of collinge axle over collars, 46 in.; over solid flaps, 38 in.; width of same, 1½ in. by 5½ in. long; length of boxes, 8 in.; size of axle, 1¼ in.

Length of side spring, 38 in.; number of plates, 5; width of same, 1½ in.; compass over all, 9 in. Length of cross spring, 38 in. to bearings; number of plates, 5; width of same, 1½ in.; compass over all, 4 in. Height of body from ground at center, 22 in.; height of step from ground, 11 in.; depth of step, 11 in. Length of shafts from bar, 5 ft, 3 in.; width of same at points, 20.; height under tug stop, 41 in.

Digitized by Google

FORGING STEP HEADS.

The gradual advance in the suspension of two-wheeled carriages, together with their diverse design, has quickened the means by which these improvements have had to be met in every branch of the trade, and that of the smith has as a natural consequence, to be in the first line of progress.

The hanging of two wheeled carriages from platform springs and grasshopper springs to side and cross springs of various design, has naturally diverted rigid shaft fixing, to a more pliable and technical hanging, by which a responding movement of the shaft to the horse's action is fully obtained.

There are no builders of any repute who now think of suspending the shafts of two-wheeled vehicles they build upon any other principle than that of fulcrum bearing in front at the

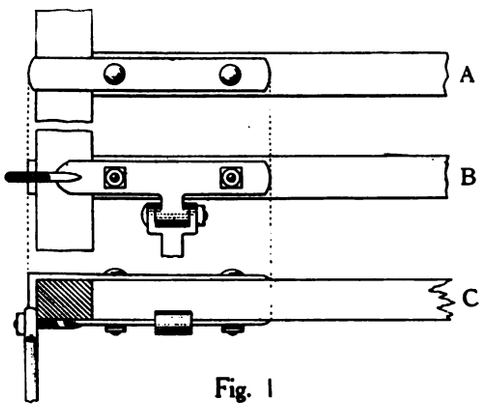


Fig. 1

draught bar with relief movement behind, which may either be a spring or a shackle play. This provision is most necessary, otherwise the horse's action is conveyed to those riding in the vehicle should the shafts hang on the animal's back with any weight, and if the balance of the trap itself is defective, then the trouble becomes a very uncomfortable experience to those who have to use such a carriage.

It is to avoid this unpleasantness that shafts are fitted to free themselves from rigidity, and play in rhythm to the action of the horse and spring.

The fittings to a shaft should therefore be as free from tending to cause a stiffening action in its movement as possible, but this property is not always thought of or carried out; hence it

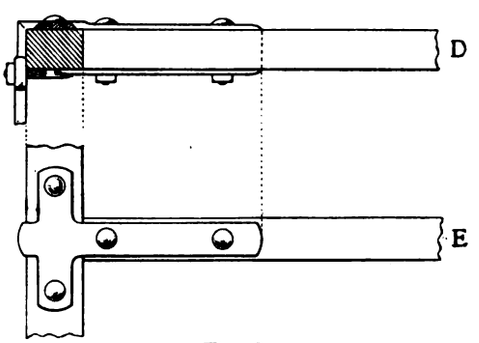


Fig. 2

is to broaden a knowledge of these things that this article is thought to supply a need to those young in the experience of two-wheeled carriage suspension.

Fig. 1 shows at C the method of making and fixing a step to the shaft and cross-bar of an under carriage, for dog-cart and similar two-wheelers. The head is forged with half-round surface; the bolts can either be put through to allow their heads to stand up, or they can be made countersunk and dressed off level, which makes by far the neatest job, retaining all necessary strength. The front of the step head is swaged back, leaving a boss to take the strap bolt, which binds securely the shaft and draw-bar together in the final fixing. The strap bolt is forged with a barrel fulcrum boss, to which the shafts and cross-bar are held, with a jawed stay, as explained in diagram B, while diagram A shows the step head as finished in the forging.

In fixing this step to the shafts and cross-bar, the bolts should be given a draw of one-third the hole; the step head should fit the side of the shaft neatly, because if this is neglected at the bottom edge of the bearing the step itself will be thrown out of square. Giving draw to the head bolts binds the shoulder of the draw-bar to the shaft, while the strap bolt binds all together with a locking and final grip.

Fig. 2 shows the same style of step head as in Fig. 1, but with lip flaps forged on each side of the head; it is advocated by some in the trade that this form of step head gives a steadiness to the steps, fixing security greater than that shown in Fig. 1. This is, however, not the case, because in the wear and tear of a step's use, together with the springing action of the shaft, a chafing wear in the front of the flap is caused, which gradually works into a weakening depression and thus allowing water to enter and surface decay to attack the shaft at its most vital part. Hence, a step head ought not to be forged with flaps at all, but made as in Fig. 1, and properly fixed as herein instructed. The strap bolt is forged with barrel-eye boss and jawed fulcrum stay, as in Fig. 1. Diagrams D E show the elevation and plan of step head of Fig. 2, but of course made with fulcrum bearings, as already described in Fig. 1.

Fig. 3 shows a method of fixing shafts and draw-bar with a band clip, in which is forged a fulcrum barrel boss-eye, as in

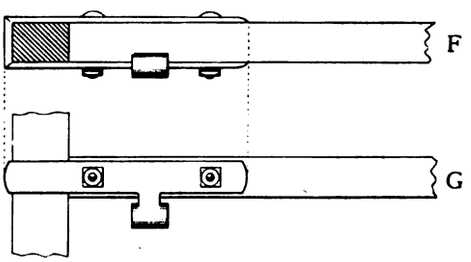


Fig. 3

Fig. 1. This is a method employed when the front step and the front scroll iron are forged in one, or where the step is fixed to the body independently of the shafts and scroll iron.

There are, of course, other methods of hanging shafts with fulcrum bearings, but they do not come under the heading of step head forging as treated on in this article. The diagram F shows the band clip fixed to the shaft and draw-bar, while diagram G shows the plan of the clip with fulcrum barrel eye and jawed body stay end for the shafts to work on.

CARE AND TREATMENT OF SPRINGS.

Spring manufacturers of good standing insist on testing every spring before it leaves the works. This is done by great pressure when the spring is finished and bolted together. It is held in position at the ends, and pressure applied until all the compass is taken out. When released it should measure the same as before the pressure was put upon it. If the springs are found to be correct they are greased between the plates and sent to the customer. Many carriage builders and wheelwrights have experienced the disagreeable fact of rust working out from between the plates, disfiguring the paint and causing annoyance to their customers, says a writer in Automobile and Carriage Dealers' Journal. There is only one way to prevent this, and that is to have every spring taken to pieces before being fixed to the vehicle. Each plate should be painted, not too thickly, with oil-color paint, and left to dry. This operation can be done over night, and the next day each plate should be carefully greased both sides with a mixture of tallow and powdered blacklead. This should not be applied too lavishly, but rather sparingly, or else when the spring has been at work some time the

Digitized by Google

grease will be forced out and cause quite a bead to be seen on the edges of the spring, which is unsightly, and would be a source of annoyance, because, in working the vehicle, it is conveyed to other parts of the carriage or body and takes the gloss off the varnish. It must be remembered that in all cases where springs are taken to pieces to be cleaned they should be treated in this way; if not, the dusty remains of the rust would become moist by the water used when washing the vehicle, and a very little time afterwards would have the appearance of not having been done, and it would be very difficult to convince the customer that they had. Even if the water does not get between the plates the case is almost as bad, because the edges of the springs become covered with red powder. The spring eyes should also be attended to when in the hands of the smith; any wear that has taken place should be made good, as a loose eye bolt allows undue play, and will cause noises, and at the same time interfere with the general level of the vehicle. When new plates are fitted great care should be taken with the studding and slotting. For studding, bolsters of various sizes should be kept at hand; those having a caulking at the edges, allowing just sufficient for the width of the spring plate, and the stud hole must be exactly central, or the next leaf or plate will not be level at the edges when put together. The same applies to slotting, because, however carefully the stud is put in, if the slot is not also central, the result is an uneven edge when put together. It is not so much the unsightly condition of the edges as it is the effect that it has upon the spring generally. Supposing the plates are properly fitted and the center bolt hole and one stud and slot are central, the other stud and slot being a little out of center, the result of pressing the plates together under these circumstances would be that the end on which the stud is not central will put the leaf out of its proper place at that point, and, not being able to move at the other, would have to tip the leaf on one edge, and, when loaded, would wear unevenly, and very likely it would break. It is only reasonable to expect this, as springs will only work properly when properly constructed. The general freedom and elasticity for which a good made spring is noted ceases to claim these qualities when any part is made imperfect. If a spring is taken apart after having been at work for a short period, it can easily be seen whether it has been working properly, because those parts that have received the greatest pressure will have become quite free from the grease with which the leaves were treated, and the remaining parts will be found to have the same appearance as when first put together.

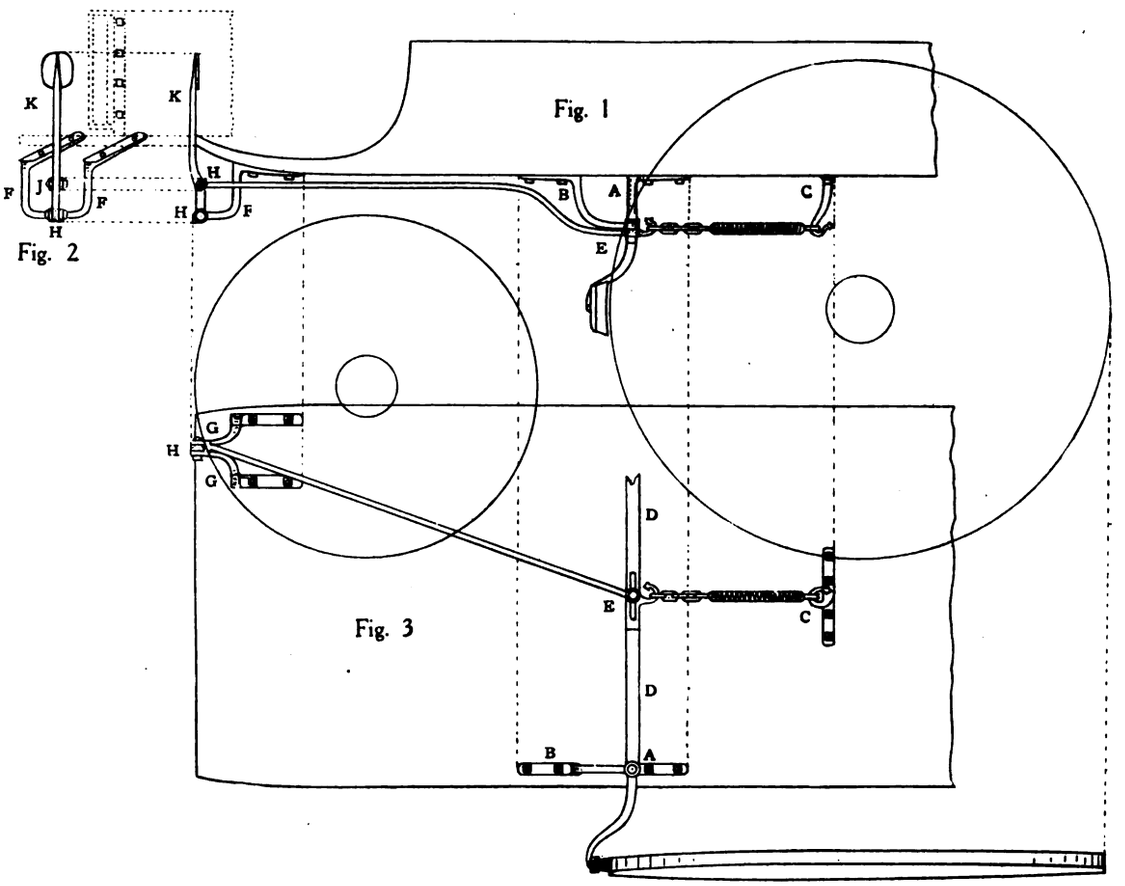
FITTING A FOOT BRAKE TO A WAGON.

Illustrated on this page.

The mechanics of brake power is as fascinating to those who are real students of practical vehicular construction in its distinct parts as are the mathematics of wave sound in its travel through acute and valley curves in breaking into song to the musical composer.

But this enthusiasm to get at the bed rock of leverage in an intricate mechanism is of a very limited radius, hence we find much ineffectiveness in the great majority of retarders fitted to carriages and wagons as the result.

In wagons with covered tops it is not always found to be a straight job to fit them up with a side lever or a foot brake. A side lever brake worked by hand must have its connecting power fixed to restricting positions in many cases, by which its effectiveness becomes blunted and an easy means in putting the power on difficult to achieve.



Fitting a Foot Brake to a Wagon.

Described on this page.

Digitized by Google

In fitting up a foot brake there are difficulties to be faced, and points of position which have to be considered, to obtain a freedom of action along the bottom of the body.

In the elevation drawing, Fig. 1, is shown a section of a wagon with the back and front wheels in outline position, so that the points of a foot brake's mechanism can be clearly seen. Point A shows the fulcrum stay, on which the arms work on spindle centers as in the plan, Fig. 3, at point A. B shows a tie stay, which holds the fulcrum stay steady to the pull of the arms. Point C shows the coil check spring stay-hook, also in plan in Fig. 3. The points D D in plan show the scissor arms of the brake, and E E the connecting rod.

Point F, Fig. 1, shows the side view of the foot arm fulcrum stay, while Fig. 3 shows the stays in position at G G. Centers H H H show the fulcrum of the foot lever and the jaw center of the connecting rod as at J in Fig. 2. Point K shows the foot arm in position on its centers H H, also in Fig. 2 and in the plan, Fig. 3, at H. The plan of the treadle stays is also shown in Fig. 3 at G. G.

The brake as explained in these drawings is very simple to make. There is no uncertainty and nothing is left to chance, so that a smith having a similar drawing to work to would be able to forge the parts off without any difficulty whatever.

In the front, for the clearance of the treadle, the dash is kept sufficiently narrow to allow the treadle to be used by the foot, as shown in Fig. 2. In the place of the connecting rod, steel wire rope is more generally used, owing to its pliancy in being worked where a rigid rod cannot act with such freedom.

When steel wire rope is used it is fixed to jawed hooks, which hook on to the treadle and scissor arms, the rope being worked to a loop at each end to catch on to these hooks. The coil spring is fitted with a few surplus links, which can be taken up as the spring lengthens, to give a firmer pull in drawing the arms off in the course of wear.

ABOUT AXLE SETTING.

A Cincinnati subscriber writes as follows:

"To settle a dispute will you kindly tell us the proper way to set an axle. How much gather do you give the axle; also how much swing, and what is the best axle set?"

"Swing" and "gather" are no longer factors in the matter of axle setting, since axle setting has been a matter of mechanical science, and first set forth in the pages of this journal. More than forty years since those terms have become obsolete among thorough vehicle builders. A plumb spoke with a horizontal bearing is the true and proper method which we shall endeavor to make clear by the accompanying illustrations.

Fig. 1 expresses the axle and its parts as follows: A, the axle stock; B B, the spindles or arms; C C, the outer ends of the

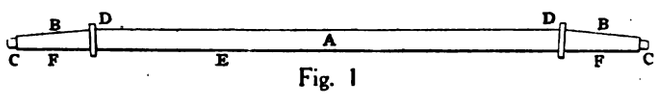


Fig. 1

spindle bearing; DD, the collars; E, the underside of the axle stock; F F, the under parts or bearings of the spindle, which we place horizontal. The taper is all on the upper surface and is so shown by the sketch.

When the wheel maker drives the spokes in the hub, he drives them so that at a certain height—in making a dished wheel—from the hub the face of the spoke, or of all the spokes, come to a certain measurement. The spoke face is ever on a straight line, the necessary amount of taper to produce the required strength being at the back. The modern wheel maker drives the front spokes so that the faces of the same are at right angles with the face of the hub.

Fig. 2. G, an outline of the axle stock; H H, the spindles; J J, indicate the two under spokes; K K, the upper part at center of spindle H H; L L are the points of the spokes at the floor surface M; N N shows the face line of the spoke. Where the spokes are dodged use in measuring one front spoke and one back spoke, measuring from the fronts of the spokes only. When the measurement is equal they may be said to be "a plumb spoke," the proper position to sustain the load. This is the position to be occupied by the spokes when the vehicle is freighted. To reach this the intelligent smith sets his axles in such a manner that the spokes are just a trifle inside of a plumb spoke, that when the weight is applied the under spokes are close to plumb. The average smith, by experience, is most usually correct in this particular. The axles are set to give the spokes the greatest possible amount of bearing strength, and by means of the horizontal bearing the matter of friction is reduced to a minimum. This is where the matter of the fallacy of so much "swing" is exploded.

Take a pair of wheels with one-fourth of one inch dish each, then take another pair with one inch dish each. Where does the matter of "swing" spread itself? In one instance, with a plumb spoke, we would have two to three inches swing. In the other instance the swing would run out five or more inches. This at once shows how futile it is to try to set axles on the so made swing principle.

The gather of axles is also a very silly procedure. Years ago the rules applied were various, "the width of one tire," or half

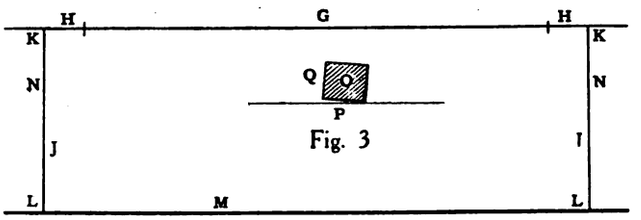


Fig. 3

Fig. 2

the width of one tire. In either of these instances or by either of these methods the box when the wheel was in motion would at its back end be crowded up against the collar and do more or less grinding at every turn the wheel would make.

In Fig. 3 we show an outline of a cross section of the axle stocks. O, the axle; P, its under side; Q, its front part. By this sketch it will be noticed that the axle is partly elevated at the front, which is done by various means, one of which is by adjusting the springs just enough that when everything is applied and the traction is applied to the wheels, that the distance between the rims, at height of axle center, are parallel, which is the right position. The result is no rubbing or wearing against collar or axle, and friction reduced to a minimum.

The Carlton axle gauge, formerly sold by English & Mersick, of New Haven, Conn., was the most simple and most perfect axle setting device known to the writer.

NEW YORK CARRIAGE AND IMPLEMENT DEALERS ORGANIZE.

The carriage and implement dealers of New York State, who were in session at Syracuse, N. Y., recently, formally organized into a protective association. The officers elected were F. H. Ebling, of Syracuse, president; J. Young, of Troy, vice-president, and C. E. Wethey, of Port Byron, secretary and treasurer. These officers, with eight members, will form a board of directors. The meetings of the association will be held at the call of the president and the annual meeting will be held next November. Mr. Ebling said the purpose of the association was for the mutual benefit, protection and good of the dealers, and to promote better understanding between the manufacturers, dealers and buyers.

Some idea of the importance of yellow pine in the lumber world may be had from the fact that last year's production in yellow pine amounted to more than 33 1-3 per cent., or one-third the entire lumber cut of the country.

Digitized by Google

PAINTING AND UPHOLSTERING

TO FINISH GOVERNESS CAR IN THE NATURAL WOOD.

The desire to finish certain types of carriages in the natural wood in the painting, is not confined to one continent, but has found admirers wherever carriages are used as pleasurable instruments of travel.

At international exhibitions, where carriages of all nations vie with each other in the arena of quality, design and style, those finished in the natural wood have found much favor with buyers. So that finishing carriages in this way has become an established fashion peculiar to certain types of carriages, of which the governess car is a leading character.

The ways of nature are in the main inscrutable to man, and it is not until he has studied her, that he finds a way to harness her to his uses. In the matter of finishing carriages in the natural wood, a painter is brought face to face with nature at once, he has to embellish the surface of woods in their natural state to give them richness as well as protection.

Nature has strengthened all woods with fats or oils, as a protection against weather and as a help to their vitality, in the same way as all animated nature is fortified with fats, as a protection to their life and longevity.

The first thing a painter has to do in getting a car up in the natural wood, is to give the body and other parts of wood in the gearing, a coat of gold size, and run it well into the screw holes, and pin holes, so that the subsequent puttying gets a good ground hold on the wood. The object of the gold size coating is to make it an absorbent of the natural oil on the surface of the wood it is applied to.

After the coating is thoroughly hard, say not less than twelve hours, it should be sandpapered down perfectly level, it will not matter much about taking the size off--because it will have served the purpose it was intended for, that is, a foundation in filling and stopping up the grain of the wood.

The papering must be done with fine sand-paper, and worked the way of the grain—and never across the grain, or marks will be left that cannot be got rid of.

After dusting off, clean and dry sponging, the body should be given a coat of half gold size, and half hard drying varnish—because too much size will cause the work to crack. When this coat is dry, it should be very carefully papered down with very fine sandpaper, but not taking off too much stuff in the operation, only enough to make the next coat take.

The putty for pin and screw holes can now be made and nicely matched to the color of the wood it is to be leveled into. It should be made to dry hard, as soft oil putty soaks the varnish and always looks dull and dead, as well as shriveling.

After puttying, clean carefully and dust off, and give job a nice even coat of hard drying varnish, and allow it a clear day at least to stand to harden.

The job can now be flattened down with pumice powder and water and given another coat of hard drying varnish, which should be a nice full coat, and allow two clear days to stand before flattening again.

In the first flattening care must be taken not to cut through to the bare wood, because the water will cause the grain to rise, and once that takes place, the part effected will always look bad, and in all probability set up deadening of the grain within a small radius. After standing for two days, the job should be well flattened down for finishing, and given a full coat of finishing body varnish.

Unless the wood is very open grained, it will be found to have filled up very well, in all receiving five coats of stuff. In very open grain wood an extra coat of hard drying varnish should be given, thus making in all six coats. This way of getting up a varnished work job has given good results, and is preferred to using filling up varnish, which means a great deal of facing to get the coats down to a perfect level, and requires more stuff, while to the ordinary eye the job looks better.

All the iron work on the car should have at least two coats of lead color and got up in black and japan, or painted and stained only, or, as many builders do, pick out and fine-line to taste upon the stain color ground. But many builders prefer the stain to match the body character and finish in this way. But it is is more characteristically in harmony to have all the under gearing iron work, as well as that which is fixed to the body, finished in japan only. The contrast of japan is more striking than stained work, and lends a richer artistic effect, by contrast, than can be got from stained or painted and lined out iron work, and gearing throughout.

SOME BROWNS TO BE IN FASHION.

Some of the supposedly commonplace browns promise to get an opportunity to show their novelty of effect during the coming season. Orange brown is one of these. To bring the surface up in orange brown you simply observe all the smoothing and leveling up practice usually in vogue. Then into three parts of burnt sienna whip two parts of orange chrome, massing the pigments well together and thinning out to a working consistency with turpentine. Procure the pigments ground in japan, and in mixing add a tablespoonful of raw linseed oil to a pint of thinned color. Apply two coats of the brown, and in the first coat of varnish add enough of the brown to distinctly stain the varnish and enrich the surface.

Coffee brown is made of one part golden ochre, one part burnt sienna, and four parts burnt umber, all intimately united, and the mixture used as a solid color.

Olive brown may be produced by mixing three parts burnt umber to one part lemon yellow.

Use this brown according to the practice recommended for orange brown. Simple and few striping effects are needed.

VARNISH BRILLIANCY.

Varnish brilliancy is a supreme essential in carriage finishing, but as a rule the finisher depends too much upon the varnish and its superior quality, from which to obtain this desired brilliancy. However excellent varnish may be, it must depend largely upon the surroundings in which it is applied and forced to harden in, for a great share of the lustre demanded as a result of its composition.

There is for example, the matter of light which finishers not infrequently set aside as one of minor importance. But light after a night of seclusion in a dark room is to varnish what sunshine is to the human race. It increases and deepens the brilliancy of varnish, rounds out, so to speak, its form and substance and gives it endurance which it would not otherwise possess. Frenchmen have been strong advocates of light as a developer of varnish brilliancy and the finish upon French carriages has been admired the world over.

Ventilation, too, has much to do with the development of lustre. Pure, fresh air, warmed to the proper temperature, and with at least 90 per cent. of the moisture extracted from it, not only contributes to the brilliancy of the varnish but promotes the drying of it.

Ventilation may not always be commanded through systems

Digitized by Google

that are first class, but it should be had, nevertheless, even if procured through the medium of an open window or two. If no other means are at hand then we should advise raising the lower sash of the varnish room windows, and lowering the upper ones an hour or two before varnishing. With an established volume of fresh pure air in the room, the windows may be closed and the varnishing proceeded with.

Then, of course, much depends upon the varnish itself for the greatly desired brilliancy. A carriage owner is credited with the statement "why apply a $6.50 per gallon varnish to a $300 carriage when a $1 per gallon varnish suffices for the $50,000 house?"

Upon first thought one can hardly credit an intelligent business man with an assumption of this nature, but further consideration will make it clear that it is simply an error which the uninformed layman falls naturally into.

It is a reasoning basis from which a great deal of false speculation and many erroneous conclusions are reached.

In the first pace a $1 per gallon varnish does not suffice for a $2000 house much less a $50,000 one. Secondly the carriage surface and the house surface are as different as honesty and dishonesty. The service to which the carriage is exposed is in the ratio of 20 to 1 more exacting than that imposed upon the house interior. Only a high grade varnish, one with heoric quality iu it, fine in all its parts, and essentially a thoroughbred, is today suited to the requirments of the carriage. Whether it cost $6.50 a gallon or twice that amount, matters little. The vital necessity is that it possesses unsurpassed brilliancy with an endowment of elemental strength and endurance that gives it a value out of all proportion to whatever price the maker may happen to put upon it.

PAINTING OVER CRACKED SURFACES.

No matter how strenuously he may object to the above the painter in the line of duty simply has to do it. Not all cracked surfaces can be burned off, because, principally, a majority of carriage owners absolutely refuse to pay the cost exacted for the work. Hence the subterfuge, filling up the cracks.

The methods of doing this are as many as are the roads to Rome.

First, take of oil ground and dry white lead, equal parts, and mix to a glazing consistency in equal quantities of rubbing varnish and coach japan. Into the mass beat enough color of that which is to serve as the final color to give the pigment a decided shade or tint. Sandpaper the surface down close with No. 1½ paper and then apply, without any preparatory coating, this "stopping" mixture, using a 2½ inch or 3 inch elastic glazing knife, pressing the pigment firm into the crevices. The following day go over the surface carefully and glaze in any thin patches of surface that may be discovered. Then permit the mixture to dry 72 hours. Then proceed with raw linseed oil and an artificial pumice stone block to surface the mass down to a level and smooth condition. Color and finish in the usual way.

Another method consists in thinning ordinary roughstuff to a consistency permitting it to be applied with a camel's-hair brush. A coat of this thin mixture will penetrate and serve to seal up the cracks, as it will also serve to give a foundation for the subsequent coat or coats. Next mix a preparation of roughstuff filler and keg lead, equal parts by weight, to a supple state in rubbing varnish and japan, half and half. With the broad knife above referred to plaster on a coating of this "stopper," making it sufficiently solid to dispense with a second glazing of the mixture. Rub this also with the artificial pumice stone and oil, and finish after approved methods.

The main mission is to get these pigments securely, if possible, into the cracks, and to keep them there during the rubbing. The use of oil, instead of water, in rubbing is advised because oil acts as a binder and is negative in its effect upon the fissures while water is exactly the reverse.

ELIMINATION OF STRIPING EFFECTS.

The carriage and wagon painter finds himself often in these latter days wrestling with the question, "Are striping effects to be omitted from the category of painting and finishing operations altogether?" As we know, all signs are liable to fail, but the apparent drift of public sentiment and the tendency of present practice are alike favorable to a minimum of striping effects —if not, indeed, to a complete elimination of them. But the painter has no occasion to be fearful or afraid that his occupation, like that of Othello, is to be lost.

Whatever striping and adornment of the modern carriage is to be applied will be of the finest and most artistic. Such striping will have direct reference to the real adornment of the surface, which, it must be confessed, it has not always had in the past.

Moreover, with the passing of the demand for generous striping effects, there has come a call for a more excellent finish and for more beautiful surface colors and combination of colors.

In the development of these the painter will find, if anything, a larger demand for his service, and the work itself will scarcely be less absorbing.

Then, too, if there are to be fewer lines of embellishment upon the carriage, it will mean the enforcement of a more exact refinement of harmony between the striping color and the surface color, and this in turn will invite the exercise of the colorist's art to an extent heretofore unknown.

In reference to the simplification of striping effects, the question has doubtless occurred to all thoughtful painters, "Why is much striping, if any, necessary?" On a beautiful field of green, or blue, or black, even, and on fields of other splendid colors, as well, a simple line of some harmonizing color, accurately cast, radiant with richness of effect, without crudeness of form or of anything else to destroy the general or detailed appearance of the finish, is effectual in accomplishing results beyond the power of 75 per cent. of the so-called "cut up" striping at one time so fashionable. .

Simple or few striping effects mean for the painter greater exertion along some other line in the painting system—notably along the line of color and surfacing—through which the attractiveness of the finished carriage may be increased.

PUTTYING THE CARRIAGE.

Puttying appears to be a comparatively simple operation; and so it is with, of course, some reservations. Like many simple appearing processes which form essential parts in the scheme of painting and finishing, puttying, while seemingly easy to do is quite the reverse. Ordinarily it costs anywhere from three to four times as much to reduce putty to a proper surface as it costs to apply it to the surface. Herein, then, is to be found the importance which attaches to the work of putting it on. The party puttying must keep in mind the cost likely to ensue in getting it down to a proper level. Naturally, it is not all puttying to merely knife the pigment into position on the surface. There is the making and conditioning of the pigment which, it is just to say, is no small part of the actual labor involved in the handling of putty.

Putty, to begin with, should be made of good materials which include an excellent quality of white lead and whiting, and a no less excellent quality of coach japan and rubbing varnish. And to all these add honesty and skill in the making of it. A putty as good as any for all kinds of work, barring special requirements, is made of dry white lead three parts, best bolted whiting one part, mixed to proper consistency in equal parts of rubbing varnish and coach japan.

However useful and necessary putty may be its use should be restricted to minimum requirements, for, at best, it is alien to the surface. Some workmen commit the mistake of using too much putty. That is to say, they apply putty to spaces and parts of the surface which are not in actual need of the pig-

Digitized by Google

ment. The least putty used, and the fewest places puttied, consistent with good surfacing, is by all means the best practice.

In actually puttying a surface cavity it is necessary to simply fill the hole flush with the surrounding surface. Anything in excess of that is detrimental to the ultimate finish and durability of the work. A surface depression filled flush provides for shrinkage of the pigment. Swelling of putty is an abnormal characteristic and will not occur if the pigment is properly mixed.

TRIMMING A GOVERNESS CAR.

Illustration accompanying.

In upholstering a governess car with King of Belgium seats, it is more fitting that they should be trimmed in a style following that of a motor body fitted with this design of seat.

The general design in horse drawn carriages is slowly absorbing the profitable characteristics of motor bodies in their progressive fashionings, where the innovations speak with an advancing tone. A governess car body built in its seating room

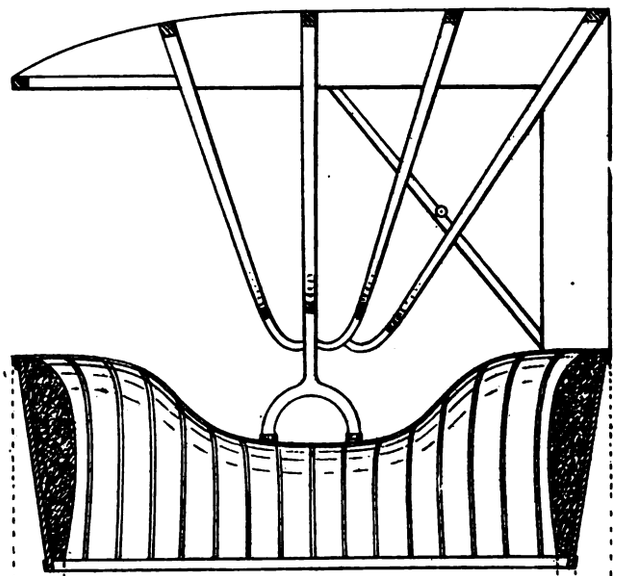


Fig. 1

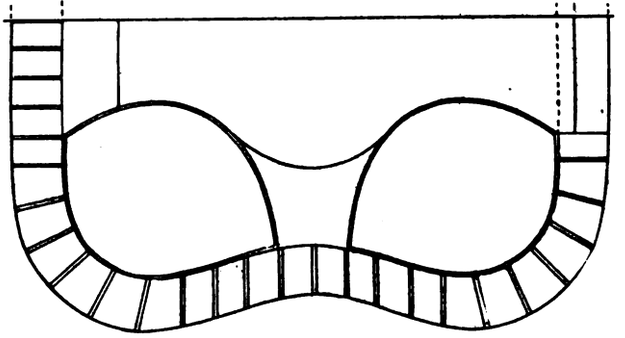


Fig. 2

on the King of Belgium principle should be upholstered in character, to give a full living force to the departure.

The style in which the governess car trimming is presented here is plain but very neat; the back squabs are column pleated in the same style as a motor carriage is upholstered.

This adaptation in design has a twofold value, for while it is a break away from prevailing fashion in this design of two-wheeled carriage, it serves the double purpose of giving a new experience to the trimmer, and thus educates him in new lines in turning out his work, which will stand him in good stead

The columns in the squab should be creased, to allow the pleats to stand up with an alternate fulness, and thus panel the columns, or the creased edges may be pressed to stand up their own thickness and stitched and stuffed individually to a faint rounding surface, but the squabbing itself should be fulled well out from the inner stuffing of the squab, to give a full roundness for the back to rest against.

The cushions are made individually to suit the corners; the center space between the cushions can be covered in plain squab to match the cushion, or left plain. The tops of the cushions are made in plain surface. They can be made in frames and coil springed, webbed, and hair stuffed on the surface, the same as motor body cushions are made and finished.

The canopy head is made in its covering of fawn colored waterproofing, while the bows are finished in the wood, and varnished, which blends in appearance with the covering material.

In fixing the squabbing lace is used round the top edges. Seaming and pasting lace make the smartest finish, but piping is now extensively used with marginal welting of the same stuff as the squabbing.

A governess car is one of those natty little traps that require refinement both in building and upholstering, so that the purely elementary methods of building may be sound in principle and rich in finish, in which is entwined the very essence of business insight and commercial tact. The materials that are used in motor carriage upholstering are quite becoming in trimming a governess car, because of their good wearing qualities and in resisting the effects of weather.

Fig. 1 shows the elevation design of back squab and outline of canopy top. Fig. 2 shows the back squab and seats of body in plan. The seat cushions are made with plain rounding tops and finished in piping. Plain tops are the best for outside cushions, because they are easily kept clean and dry, and are better adapted to such a vehicle as a governess car.

SHORT STORIES FOR EVERY DAY PAINTERS.

If gold leaf decorations or lettering are to be varnished the same day the leaf is applied, it is an insurance against accidents to coat the leaf with a thin application of white shellac.

Carriage painters having occasion to use wood fillers, as in these latter days they often do, will do well to let corn starch and, in fact, all vegetable fillers severely alone. Use, instead, a mineral paste filler which will neither shrink nor discolor.

Crack filling formulas are fairly without number. One that is used by many carriage painters consists simply of gold-size japan. Apply a flowing coat of the japan and, when dry, kill the gloss with a block of rubbing felt dipped in water and No. 00 pumice stone flour. The gold size gets down into the fissures and holds with great tenacity.

In glazing double and three line stripes, glaze each line separately. If a broad pencil be used, and the width of the pencil is made to cover the two or three lines at once, a blurred and cloudy effect will be the result. Try the other way and be happy.

To seal up and make like new—for a time, at least—an old cracked carriage or wagon surface from which the owner does not care to pay for the burning of the paint, mix anti-kalsomine to working consistency with hot water and, while it is still hot, apply it to the surface after a thorough sandpapering with No. 1½ sandpaper has been given the latter. Let the first coat stand, say, 15 hours, after which two or three coats per day may be applied. Rub the kalsomine foundation with rubbing brick dipped generously in raw linseed oil. Then wipe dry and color stripe and finish in the customary way. Cheap method and fairly durable, too.

Don't thin varnish. It's against the best practical experience, and it is contrary to the experience of the men who make it.

Digitized by Google

Admit that it works no apparent injury in 75 per cent. of cases, it is the remaining 25 per cent. that is amply sufficient to wreck the profits of the business.

New York crimson is not a new color, but an old one now enjoying a deserved reign of popularity. Simply first paint the surface a good, strong peach-blow color. Then mix No. 40 carmine three parts and English vermilion one part in rubbing varnish sufficient to produce a nice gloss when applied to the surface. When dry, flick off the gloss with a moist sponge dipped in No. 00 pumice stone, wash up and flow on a generous coat of rubbing varnish stained to an enriching red with No. 40 carmine.

One decided fault with latter day carriage painting is the tendency—largely forced upon the painter, to be sure—to work over the rubbing varnish coats before they are safely dry and hard. The practice is unsafe, and presages disaster when the work gets into the current of daily service. For really quick work, better buy quick drying varnish. It is wiser than to work prematurely over a slow drying one.

You all admire brilliant gold bronze effects. To insure such effects for striping, etc., first wash the verdigris from the bronze by soaking the bronze over night in the fluid. The brassy substance will swim to the surface, from which it may then readily be poured. Mix the bronze in two-thirds pale coach japan and one-third finishing varnish, and use turpentine as a brush dipper.

Many formulas have been forthcoming for cleaning varnish brushes which either through disuse or misuse, and possibly both, have grown "lousy," but a brush so diseased is clearly beyond effectual cure. It can, of course, be utilized in painting the floors of carriage and wagon bodies and in some other rough work. However, for use as a varnish brush—don't..

Black color-and-varnish should not carry too much color. It diminishes the natural lustre of such coats to a marked degree. First get the surface sufficiently black, or very nearly so. Then apply color-and-varnish to intensify the effect, for which purpose a comparatively small amount of color and a large amount of varnish will suffice.

A carriage is properly painted and varnished only when there is a proper balance throughout all the processes and parts. As for example: The interior should be neatly and effectively worked up to a finish. It should have a decent measure of surfacing along with adequate color and color lustre, to all of which should be added a body of varnish rich in the elements of wear and fine looks.

To putty glass in coach or heavy vehicle window frames, use a pigment made as follows: Whiting, eight parts; dry white lead, one part, mixed to proper consistency in raw linseed oil, adding a few drops of coach japan. Color the putty to meet the demands of the surface.

CHARTER MEMBER TWENTY-THREE YEARS.

E. V. Overman last night confessed to the Carriage Makers' Club that he was a charter member 23 years ago, and that the meeting was a celebration of the event. He told of the great good done by the club for the business, of the reforms accomplished, and, above all, of the strong social ties it has created. Will L. Finch spoke on the work done by the industrial bureau, while W. A. Sayres told about his recent trip to Europe.—Cincinnati Enquirer, Nov. 20th.

TWO CONCERNS CONSOLIDATE.

The Stanley Manufacturing Co., of Moreland, Ind., which has gained an enviable reputation in the manufacture of their well known runabouts and touring cars during the past two years, have moved their entire plant to Troy, Ohio, in order to secure larger facilities, and have consolidated with the Troy Buggy Works Co. at that place. They will continue to manufacture the Stanley automobiles in the name of the latter company on a much larger scale than heretofore. The change has already been made, and they are now at work on several new models for 1909.

A COACH FOR PONIES.

Many of those who visited the Olympia show in June last will remember the four beautiful harness ponies which were shown in single and double harness, and also in a four-in-hand coach, says The Field, an English publication. It will probably be also within the recollection of our readers that these ponies were sold for a very long price to A. G. Vanderbilt, the well-known American coaching man, who for some weeks during last spring worked the Brighton road with a well-appointed coach. As to the price which Mr. Vanderbilt paid for these wonderful ponies the secret has been well kept, nothing official having ever transpired. It may, however, be stated that the sum of $20,000 was freely mentioned, while some who are often behind the scenes even added another thousand. The ponies were exported soon after the show, and have since won many prizes in single and double harness, but have not been shown as a team. During the latter part of September Mr. Vanderbilt communicated with Messrs. Mills and Sons, of Cambridge place, Paddington, London, Eng., stating that he wanted a coach built for these ponies, but that it must be completed within a month, so that it might be used in the New York Horse Show on Nov. 12. It need hardly be said that this was an order by no means easy to execute, for a coach usually takes at least six or eight weeks to build, the many coats of paint taking a long time to dry. Messrs Mills were the builders of the coach in which the team were originally shown, and thus they knew exactly what was wanted. They set to work at once, and in twenty-eight days they have turned out a perfect little coach, which is not only a triumph of the coachbuilders' art, but in which the work has been in no way scamped. The new coach is practically a duplicate of the original coach, but it is of a different color, being crimson lake and carmine—whereas the first coach was yellow—with fittings of real silver. In the hind boot is a cellaret and a fitted glass tray —the glasses being monogrammed affairs of the best English cut glass—and in the fore boot the breaks are protected by a wire arrangement. The foot break and the hand break can be worked in unison or separately, as required, and the foot break can be shut off if it is not wanted. The weight of the coach is 1,550 pounds, including all the fittings, the height to the roof 5 ft. 9 in., and no fewer than twenty-three coats of paint have been laid on. Lastly, all the cushions can be protected on a wet day by waterproof covers, which are put on in a moment, and fastened with studs.

BEING PUT IN SHAPE FOR A LONG PERIOD OF OPERATION.

The Columbus, O., State Journal of Nov. 20, contained the following: The big plant of the Columbus Buggy Company in Dublin avenue, which is now shut down for the annual inventory, will be put in the best possible shape for a long period of operation before work is resumed. The plant will not be started until after Thanksgiving, and then it will resume work with a full force. The sales representatives of the company in all sections of the country, are reporting on largely increased business in sight and officers of the company believe that all records will be broken during the coming year.

Whatever convenience may be thought to be in falsehood and dissimilation is soon over; but the inconvenience of it is perpetual because it brings a man into everlasting jealousy and suspicion.

Digitized by Google

General Topics of Interest to Trade

THE GOLDEN WEST AND AMERICAN INDUSTRIES EXHIBITION

An Exclusively American Display to Take Place in London Next Year.

In May of next year there will open in the celebrated exhibition buildings and grounds at Earl's Court, London, an important exhibit of American industries exclusively, and will continue during the summer until October.

The advisory committee of this exhibit are most influential men, including the present and prospective Lord Mayor of London, as well as the names of persons of high distinction in official and commercial circles on both sides of the Atlantic.

From the prospectus of this exposition we extract the following:

The time is ripe for an exclusively American exhibition to be held in London, as being a means of strengthening the commercial and friendly relations existing between the two greatest English-speaking and most enterprising countries in the world. The marvellous inventive capacity of the United States, which has been stimulated by the peculiar conditions of that vast continent, has long been recognized by the British commercial and general public. It is true that the notion is everywhere prevalent that America is a big country; that her resources are tremendous, and that she does everything on a large scale, but to bring together representative examples of American inventive and commercial genius in every department of trade will convey such an idea of the magnitude and importance of American industries as will be a perfect revelation to even those who imagine they have a fair conception of the wealth, industry and science of the United States.

Although the manufacturers of the United States are naturally keen competitors with European nations, the rivalry has always been of the most friendly character. It is not too much to say that American machinery, tools and other specialties are to be found in all the principal government, railroad, engineering and other workshops throughout Great Britain and the British possessions generally. An important feature in connection with a properly-organized and well-conducted exhibition is the extent to which it is visited by buyers for foreign, colonial and other government departments and commercial concerns generally.

The proposed exhibition will enable manufacturers of the United States to bring before the British public—and more especially the commercial public—their latest and best appliances in connection with every branch of industry, and as British manufacturers are keen to introduce into their business labor-saving and other appliances which are calculated to increase their outpue and to minimize cost, the business results of an exhibition of this kind should be of an exceedingly satisfactory character. It will comprise, also, carefully selected examples of products of the farms, ranches, forests and fisheries, the flora, the animal and bird life, the mines, quarries and mining interests, arts, crafts and industries, archaeology and ethnology, natural history, domestic economy, habits, pastimes, recreations and sports of the people.

For full information regarding the Golden West and American Industries Exhibition, copies of the rules and regulations, applications for space, etc., intending exhibitors should communicate as early as possible with John W. Ryckman, Commissioner for the United States, San Francisco, Cal.; or The Secretary, London Exhibitions, Ltd., Earl's Court, London, S. W.; or G. D. Smith, F. W. Bridges, Representatives in the United Kingdom for the American Industries Section, Balfour House, 119 Finsbury Pavement, London, E. C.

Regarding Carriage and Motor Car Exhibits.

At the request of the exhibition authorities, Messrs. Mills & Sons, Ltd., importers of American carriages, of Paddington, London, Eng., have undertaken the organization of a display of American vehicles, including carriages and motor cars, and space has been apportioned for that purpose.

As all but a fraction of the American carriage trade of Great Britain passes through the above-mentioned house, they are well versed in the styles that are best adapted to the needs of that country—the British possessions and other foreign parts—and therefore they place themselves at the service of manufacturers, giving them the benefit of their advice in deciding upon their exhibits.

To make the exhibits of the greatest value to the exhibitors, Messrs. Mills & Sons will prepare a special catalogue of the carriages on view, maintain a staff of men to keep them in order, and appoint some of their salesmen to be in attendance to give information and push sales. This firm followed this method at the Franco-British exhibition with excellent results for the Canadian carriage manufacturers.

The advantage of the exhibition for the American carriage trade is a great one, as in addition to the general public and those attracted by such a display of manufactured articles, immense numbers of people from all parts of the world who congregate in or pass through London at that period of the year will take advantage of the opportunity of viewing the exhibition and will most certainly see the carriage section, as vehicles play such a large part in foreign and colonial life. Mills & Sons invite vehicle manufacturers to communicate with them for further information regarding this great show.

APPOINTED SECRETARY.

Announcement has been made that J. T. Morrison has been appointed secretary of the National Association of Agricultural Implement and Vehicle Manufacturers.

Mr. Morrison has been chairman of the freight committee of the association for the past five years, and in appointing a secretary so thoroughly competent to handle freight matters the association has made, at this particular time, a stride in the right direction, by having all of Mr. Morrison's time to give the members more than they ever have from the standpoint of freight transportation matters.

GRADUATES OF TECHNICAL SCHOOL HOLD ANNUAL DINNER.

The graduates of the Carriage Builders' Technical School, who are enrolled as members of its alumni association, celebrated their annual reunion with a dinner on November 12, at Hotel St. Denis, New York. All present enjoyed the affair thoroughly, and none seemed anxious to depart for their respective homes, many being in a reminiscent mood while others preferred conversing on topics of the day.

The graduates dined in the "golden" room of the hotel, and the table decorations consisted of bouquets of chrysanthemums. The affair was more informal than those held heretofore, and impromptu speech making was indulged in.

Daniel T. Wilson, ex-president of the Carriage Builders' National Association, and members of the board of trustees of the school were introduced by President W. Wesley Heite. Mr. Wilson gave a lengthy talk on the opportunities that are open for young men capable of designing vehicles, especially since the advent of the automobile. He said the demand is greatest for those able to design a handsome job than for those capable of drafting them, although knowledge of both are essential.

By request of several of his former pupils, Instructor Johnson arose and spoke on the progress made by the school and the fitness of its present quarters to its work.

Secretary J. H. Klein read a paper entitled "Automobile Af-

Digitized by Google

chitects," of which F. P. Stone, of Chicago, is the author, and which appeared in a recent issue of The Hub. The reading was well received and coincided with remarks previously made at the dinner. It defined the meaning of "automobile architect," as embracing a thorough knowledge of designing and construction, with a familiarity of all varieties of wood, metal and fabric used in the manufacture of automobiles, besides proficiency in the selection of colors.

The officers elected for the ensuing year consist of O. J. Duhamel, president; Fred Kubler, vice-president; J. H. Klein, secretary and treasurer; J. S. Burdick, historian.

Several members residing out of town sent their regrets at being unable to attend, and suggested that the dinner be held during the week of one of the automobile shows, a proposition acquiesced in by the association for next year.

RUBBER-ASPHALT ROADWAYS.

New Type of Pavements Used in France, and Claims Made for Them.

In answer to an inquiry, Consul-General Robert P. Skinner furnishes the following information concerning rubber-asphalt pavements in France:

Experiments, covering periods of six years, have been made with this pavement in several cities throughout France, including Paris and Lyons, and as far as can be ascertained have given good results.

In the city of Marseille a satisfactory experiment was made upon the Prado a number of years ago, and this spring three or four public places were similarly paved, these areas, however, being devoted to pedestrian traffic exclusively. Innovations of this kind make slow progress in France, but from the character of the men interested in the company and the increasing importance of the work undertaken, rubber-asphalt paving must be regarded very seriously as a substitute for the more usual form of asphalt paving.

At the present time most asphalt paving involves the use of costly installations for the heating of the powder, a considerable amount of material, and a special class of laborers, all of which tend to increase the cost. Under the new process it is possible to make cold applications of asphalt, which are said to possess all the advantages of hot compressed asphalt without its drawbacks.

Material Used and Its Application.

The material under description is a product resulting from the association of asphalt and rubber. Asphalt is a carbonate of lime impregnated with bitumen, with which rubber combines under certain conditions, thus effecting the cohesion of the calcareous molecules. This product is claimed to be more plastic and more adhesive than pure asphalt, and to resist higher temperatures. To obtain the combination of bitumen and rubber they must be energetically mixed in special devices, in which the asphalt, reduced to fine powder, is in the presence of rubber swelled and softened by a solvent. The material thus obtained is a brown powder darker than the original asphalt, and it suffices to compress it in order that it shall set and harden rapidly.

It is alleged that when asphalt is applied hot, the heat of the application coming into contact with a concrete foundation containing more or less humidity vaporizes the water contained therein, and the steam, by its force of expansion, escapes, thus destroying the compactness of the combination. This inconvenience does not present itself in the system under designation, which permits the application of a much thinner layer of asphalt and one which unites itself with the concrete, constituting a solid mass. The observations of this form of pavement satisfy those interested in the subject that the completed surface resists ordinary wear more satisfactorily than any other.

Rubber-Asphalt Pavements.

Rubber-asphalt must be applied upon a foundation of first-class concrete, consisting of 440 pounds of good Portland cement and one cubic meter (35.31 cubic feet) of pebbles and sand, the proportions being one-third of sand to two-thirds of pebbles. The thickness of the foundation should vary from 15 to 20 centimeters (5.90 to 7.87 inches) and it should be rammed with the back of shovels used in this work, and given the exact form which the roadway is intended to have, without the necessity of making later additions of concrete to bring the surface to its proper proportions. The surface of the concrete should be regular, so that the layer of asphalt may have a uniform thickness. This foundation should remain three to five days, according to the season, until it has acquired a sufficient hardness to support the ramming of the layer of asphalt. The surface of concrete having been well cleaned, is covered with a thin coating of special material, which is laid on with a brush upon which the rubber-asphalt powder is lightly sprinkled. Shortly after these preliminary operations the uniform layer of rubber-asphalt powder is spread to a thickness of 3.5 to 4 centimeters (1.37 to 1.57 inches), which is compressed progressively by means of a rammer. This done, the surface may be opened immediately to travel. It is said that by this process the top-dressing of asphalt, when laid on hot, may be one-half the thickness necessary when the asphalt is laid on cold.

As the process is covered by a patent, and exploited by a particular company, it is impossible, of course, to describe the system otherwise than in these somewhat general terms.

BREWSTER & CO. BECOME AUTOMOBILE AGENTS.

Brewster & Co., of New York, recently completed a contract by which they take the agency for the Delaunay-Belleville autobiles in the Eastern States. This is the first direct agency established in this country by the Delaunay company.

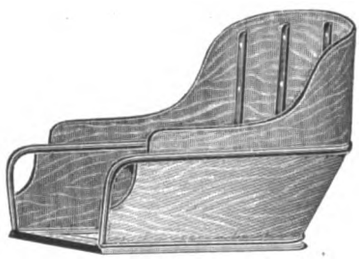
Mr. William Brewster, of Brewster & Co., in an interview makes the following statement: "We have simply been compelled to take up automobiles in self defence. Before the advent of the automobile we were unable to supply the demand for carriages. In the last ten years, however, the demand has steadily decreased. We have a well equipped machine shop here now and will make spare parts for Delaunay machines as well as the bodies. We have already ordered a number of chassis from the French factory."

NEW GENERAL MANAGER.

Mr. George A. Yule, of Kenosha, Wis., has just accepted the position of general manager of the Racine-Sattley Company, of Racine, Wis. Mr. Yule is a very vigorous, capable, conservative and progressive man, associated for many years with several of the largest industries of Kenosha, Wis., and all his life familiar with the wagon and implement trade. The company was increasing its business by leaps and bounds before the panic, and now again gives promise of great increase, and is to be congratulated in having strengthened its management through Mr. Yule sufficient to meet the requirements of such increase in trade.

WORK-IN-THE-WHITE.

In no line is creative power more essential than in work-in-the-white. For ordinary things in the vehicle line the builder and dealer can turn and find them in unlimited quantities on either hand, but for original, classy creations he must look to



the practical mind that develops these novelties in-the-white. The August Schubert Gear Co., of Oneida, N. Y., has an established reputation for classy work. Have you seen the latest creations in cutunders? Better see them on this class of work. Herewith is shown what they style their No. 167 auto seat. It's deep, comfortable and roomy. This house also makes a specialty of gears, tops and trimmings. Get a catalogue.

Digitized by Google

SPECIAL TRADE NEWS FROM MICHIGAN

Newsy Notes by our Correspondent Concerning Well Known Carriage and Automobile Manufacturers in the Wolverine State.

To provide for an increase in and a branching out of the business, the Pontiac wheel works has announced as a starter that $15,000 of its 7 per cent. preferred stock is for sale. This will increase the capitalization of the company to $90,000, of which $60,000 is common stock.

The Hayes Wheel Co., of Jackson, Mich., manufacturers of carriage and automobile wheels, has been incorporated with a capital of $50,000. C. B. Hayes is president and general manager and Richard H. Loveland is secretary.

At the quarterly meeting of the Michigan Hardwood Association, at Ludington, the following officers were elected: President, F. A. Diggins, Cadillac; first vice-president, C. A. Bigelow, Bay City; second vice-president, R. W. Smith, Manistee; secretary, J. Calvin Knox, Cadillac; treasurer, F. J. Cobbs, Cadillac. Addresses were made by several delegates. F. C. Skeels, of Cadillac, gave a talk on forestry and Messrs. Spalding and Reynolds, of the national forestry commission, discussed the problem of forest fires.

The Dowagiac Motor Car Co., organized to manufacture high-wheeled cars of the runabout type, has filed articles of incorporation with the secretary of state at Lansing.

E. E. Page, of Page Bros. Buggy Co., of Marshall, has returned from Springfield, Ill., where he sold seventeen carloads of carriages, besides disposing of a lot on exhibition at the Illinois State fair. The total sale amounted to about $30,000.

Samuel Crozier, of Flint, who has been connected with the firm of Veit & Perry for the past four years, has resigned and gone to Milwaukee, Wis., to take charge of the Dyer Saddlery Co. His family will remain in Flint for the winter.

Fifteen representatives of the jobbing firm of Parlin & Orendorf, of Kansas City, Mo., recently were entertained by the Durant-Dort Carriage Co., of Flint.

At the annual meeting of the Oldsmobile Co., at Lansing, the showing made to the stockholders was most satisfactory. The company's business last year aggregated more than $3,000,000. The factory presents a prosperous appearance and 850 men are constantly employed. The outlook for 1909 was reported to be of the brightest, especially for the new six-cylinder car, as all the 1908 models have been sold. The old directors, including Henry B. Ledyard and Henry M. Campbell, of Detroit, were re-elected.

The Anderson Carriage Co., Milwaukee Junction, Detroit, has increased its capital stock from $20,000 to $50,000.

Detroit's automobile industry has received a big impetus by the addition to the city's growing list of manufacturers and dealers of the Herreshoff Motor Co., articles of incorporation of which have been filed with the secretary of state at Lansing. Charles F. Herreshoff, the famous boat builder and consulting engineer, is a prime mover in the concern which has been working quietly in the city, and already has a plant started at Harper avenue and Dequindre street, employing some five hundred men.

An involuntary petition in bankruptcy has been filed in the United States court in New York against the Ranier Motor Co., which has its offices and warerooms in New York and its factory in Saginaw, Mich.

The First Savings Bank of Hillsdale has sued the fifty-six stockholders of the defunct Kesselring Hub and Wheel Co. for $8,000. The action is a creditors' suit and an effort will be made to force the stockholders to pay this amount out of the unpaid balance on their subscriptions to stock.

W. W. Hanchett, of Holland, and Henry Dykhouse, of Grand Rapids, have purchased the plant and fixtures of the Holland veneer works for $15,000, at a trustees' sale. The new owners will reorganize the company in order to regain the large business of the concern, which was swamped in last fall's financial depression. Manager L. Van Putten will be retained.

T. J. Meyer, of Rice & Meyer, is planning to open a new veneer factory in the remodeled Traction Company power plant at Carrollton.

Dr. E. R. Campbell, who has been engaged in the practice of medicine in Flint for the last fourteen years, has given up his office and identified himself with the Buick Motor Co. and W. C. Durant's various interests.

The body of Ronald A. Craven, who died on Sept. 17, while traveling in Australia in the interest of the Buick Motor Co., of Flint, Mich., was brought home and buried recently. Mr. Craven died from blood poisoning, as the result of an ulcerated tooth.

Announcement has been made at the office of the Buick Motor Co., of Flint, that 1,000 additional men will be put to work as fast as they can be secured.

Through the consent of all the stockholders, the Auto Top and Trimming Co., of Pontiac, has reduced its capital stock from $25,000 to $20,000.

Michigan exhibitors at the Tri-State Vehicle and Implement Dealers' Association's tenth annual convention at the Armory in Cincinnati, O., Nov. 9 to 14, were as follows: Ford Motor Co., Detroit; Durant-Dort Carriage Co., Flint, and the Michigan Buggy Co., Kalamazoo.

A. T. Jackson, eastern sales manager of the Pontiac Buggy Co., Pontiac, has secured the services of S. G. Runkle, who for the last five years has represented the McFarlan Carriage Co. in Virginia, West Virginia, Maryland, Tennessee and North Carolina. Mr. Runkle will cover his old territory.

Flint's newest industry is the Champion Ignition Co. Albert Champion and Albert Schmidt, of Boston, are the promoters. The concern will manufacture ignition coils, spark plugs and other auto accessories.

The Olds Motor Works, of Lansing, has enjoyed one of the most prosperous years in its history, as shown by the secretary's report at the annual meeting. Great advances have been made over last year's trade and, according to the present outlook, the coming year will be even better. Many improvements have been made in the year just closed and a number of additions have been built, but still more buildings must be erected during the coming year. Increasing orders have necessitated the putting on of two shifts of men and the machinery has been running day and night. A great rush of business is expected on the new $1,200 four-cylinder touring car that the company will place on the market the coming season. The following officers were re-elected: Henry Russell, president; Frederick L. Smith, vice-president and general manager; Angus Smith, secertary and treasurer. The former board of directors was re-elected.

Digitized by Google

M. H. Lane, president of the Michigan Buggy Co., Victor Palmer, secretary of the same concern, and S. B. Monroe, vice-president of the Kalamazoo Trust Co., compose a new corporation which has purchased the Kalamazoo Evening Telegraph from Mrs. Nelson Dingley, of Lewiston, Me., mother of E. N. Dingley, of Kalamazoo.

Two hundred and fifty men have been added to the payroll of the Buick Motor Co., of Flint, within the past two weeks. In the wood turning department, which was formerly the W. F. Stewart Co. building, the full quota of workmen has been secured and in other departments the men are on the bench in two shifts of twelve hours each. The goal has been 1,000 additional men, and the present outlook is that the company will get them.

Howard O. Carter, inventor of the Carter Twin-Engine auto, and president of the Carter International Auto Manufacturing Co., of Detroit, recently was in Flint looking over the prospects for locating a branch factory there that will be devoted exclusively to the manufacture of a new model of delivery wagon, embracing all the patented engine principles of the other Carter models.

The first exclusive automobile agency in Chelsea has been taken by George P. Steffan, who will handle the Ford car for the present.

The Oakland Motor Car Co., of Pontiac, has let the contract for the erection of a new factory, to enable the company to increase its output to 1,500 cars in 1909.

W. M. Paige, of Traverse City, has accepted a good position with the Maxwell-Briscoe Motor Co., a New York corporation. He was agent for the Maxwell car in Traverse City for some years.

The Weston-Mott Co., of Flint, has let a contract for an enlargement of its plant in Hamilton avenue, that city, and will thereby gain 105,000 square feet of floor space. Two hundred and fifty extra men will be employed.

The new Cartercar Co., formerly the Motorcar Co., of Detroit, will continue to put out the high-wheeled motor buggy now made at Pontiac.

McCord & Co., of Chicago, manufacturers of auto accessories, have decided to move their entire plant to Detroit and, with that end in view, have purchased part of the present Hugh Wallace Co. building, on the North Grand boulevard, between Riopelle and Orleans streets. The working force will be increased up to 1,000 men. The McCord concern does $2,000,000 worth of business annually. Hugh Wallace manufactures robes for carriages and sleighs.

The Raymond Motor Co., of Hillsdale, has resolved itself into the Mercury Co., capitalized at $50,000. The Raymond concern had $100,000 capital stock. J. W. Raymond is president and general manager of the new concern.

W. C. Durant, of Flint, married Miss Catherine Lederer, of Jackson, in New York City. Mr. Durant has been connected with the Buick Motor Co. for years, and Miss Lederer was employed by the same firm as a stenographer. The couple will tour Europe.

J. M. Borough, of the Borough & Blood Buggy Co., has been sued by the National Gaslight Co., of Kalamazoo.

Frank B. Whipple, formerly assistant secretary of the Port Huron Engine & Thresher Co., has accepted an important position with the Acme White Lead & Color works, in Detroit.

C. N. Lake, of Dowagiac, has resigned his position with Campbell & Finch, and now has charge of the woodworking department of the Lindsley auto factory.

NEW HUB AND BENDING WORKS.

Articles of incorporation have been filed with the secretary of state of Indiana by the De Pauw Hub and Bending Works, the capital being $10,000. The incorporators are William J. Rice and Emma Rice, of Louisville, and Henry Stiersaetter, of De Pauw. The plant will be located at De Pauw, Ind., twenty miles west of New Albany, and it will be applied to the manufacture of hubs and other wagon material.

ILLINOIS RETAILERS TO MEET IN PEORIA.

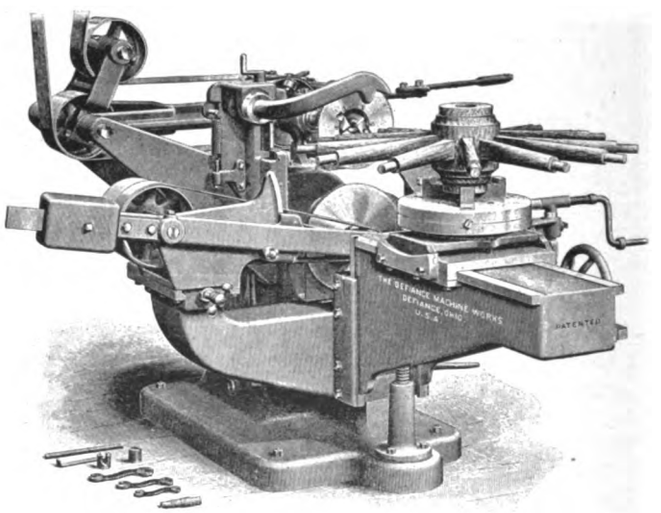
The Illinois Retail Implement and Vehicle Dealers' Association will meet this year on December 8, 9 and 10 in Peoria, Ill. W. L. Derry, chairman of the committee on membership, has addressed a letter to every dealer in the State, urging co-operation and attendance at the meeting. Those who are not affiliated with the association are urged to join.

HEAVY WHEEL TENONING AND CUT-OFF MACHINE.

This engraving represents a heavy wheel tenoning and cut-off machine, which has been designed especially to meet the requirements of automobile, wagon, heavy truck and artillery wheel builders. It is used for cutting off the tread end of spokes to equal length, reducing the wheel to the proper diameter and cutting tenons thereon, finishing the end of the spokes complete ready to receive the felloe, making tenons from the smallest to the very largest and heaviest sizes, and is made by the Defiance Machine Work, Defiance, O.

The frame, of neat design, is heavy and substantial, with cored center and a broad floor base, with all the working parts accurately fitted to it.

The wheel to be tenoned is held in a three-jawed universal chuck, which can be quickly opened or closed, and it is mounted



upon an adjustable table which can be adjusted vertically to regulate the position of the tenon with the spoke; it has also a horizontal adjustment for wheels of different diameter. The wheel is placed into the machine as shown, and revolved over the saw, which reduces it to the proper diameter, and when the tenons are being cut the spoke is held at the tread end between a V-shaped jaw, which is brought down to its work by a convenient foot treadle. It holds the spoke firmly and central with the cutter head, which is then brought forward to its work by a hand lever. The stops on the guide bar regulate to a nicety the length of tenon desired. By this design the operator has both his hands free to move the cutter head and revolve the wheel.

Digitized by Google

REPORT OF C. B. N. A. EXECUTIVE COMMITTEE

October 18 Day for Opening Next Convention. Rule Adopted to Prohibit Too Early Removal of Exhibits. Various Committees Appointed.

The executive committee of the Carriage Builders' National Association held their regular meeting on the 14th of November at the Hotel Astor, New York City.

The following members were in attendance: Messrs John Hassett, Amesbury, Mass.; D. T. Wilson, New York City; Morris Woodhull, Dayton, Ohio; E. M. Murphy, Pontiac, Mich.; T. M. Sechler, Moline, Ill.; W. H. McIntyre, Auburn, Ind.; Geo. A. Brockway, Homer, N. Y.; Chas. A. Lancaster, Merrimac, Mass.; Warren D. Oakes, Indianapolis, Ind., and Henry C. McLear, Wilmington, Del.

The first order or business was the electing of a chairman. W. H. McIntyre, Auburn, Ind., was unanimously chosen for this important position.

Owing to the pressure of business rendering it impossible for him to attend the meetings of the committee, Colonel Geo. M. Studebaker, South Bend, Ind., sent in his resignation as a member of the committee, which was accepted with much regret. Chas. Arthur Carlisle, South Bend, Ind., was elected to fill the unexpired term of Mr. Studebaker. Regarding the new regulation governing the exhibition, the committee decided to make the minimum charge for space twenty dollars.

On account of the abuse in connection with the privilege of giving a written order for a banquet ticket by a few of the members, it was ordered that hereafter this order for a ticket to the banquet which the members in good standing are entitled to, must not be given to any one who is not strictly a representative of the member given the order. The person holding the order should be a partner in his business, an officer in his company, or a regular salaried employe of the same, who attends the convention as the personal representative of the member. No others will be accepted or honored.

Owing to the removal and dismantling of some of the exhibits at Chicago late on Thursday night and early on Friday morning to the very great detriment of those exhibitors who had arranged to meet their customers on Friday morning, and to the injury of the exhibition and those who desired to keep the exhibition intact, the following rule was adopted: "No exhibit shall be dismantled or removed from the Exhibition Hall nor shall any hammering or unnecessary noise be made in preparation for removal until 4 o'clock p. m. on Friday of convention week."

This rule to be published and strictly enforced.

In relation to the order made at the Chicago convention relative to soliciting orders on the exhibition floor, the executive committee desires to call all members' attention to this, as they think a moment's reflection on the part of those not having any exhibit will convince them that it is unfair to those who have made this Exhibition Hall their office and salesroom for the time being, and paid for this opportunity to meet the vehicle trade, and it is not right for any one not exhibiting to come on the floor and solicit trade that rightfully belongs to those who have exhibits. As any member can secure space at these exhibitions if they desire to look for trade at same, they should take space and be on an equality with those who do.

All members are welcome to visit this exhibition, but fairness to those who pay for the privilege of exhibiting should prevent all from making unfair use of this privilege.

The secretary was authorized to call the next convention in Washington, D. C., during the week commencing October 18, 1909. On invitation of Mr. Gifford Pinchot, president of the national conservation commission, the following members were chosen to represent the association on this important commission:

Henry Ratterman, Cincinnati, Ohio; J. D. Dort, Flint, Mich.; Daniel T. Wilson, New York; E. W. M. Bailey, Amesbury, Mass.; George H. Babcock, Watertown, N. Y.; William A. Snyder, Piqua, Ohio; W. P. Champney, Cleveland, Ohio; D. M. Parry, Indianapolis, Ind.; Maurice Connolly, Dubuque, Iowa; Lucius Gregory, Chase City, Va.

The following officers and committees have been named to serve for the year 1908-1909:

President.—John Hassett, Amesbury, Mass.

Vice-Presidents.—Maurice Connolly, Dubuque, Iowa; W. H. McCurdy, Evansville, Ind.; Jacob Geibel, Montgomery, Ala.; Elton S. Bogle, Los Angeles, Cal.; Fred. O. Nuetzel, Louisville, Ky.; Samuel K. Page, New Haven, Conn.; S. B. Cooling, Wilmington, Del.; Daniel W. Voltz, Chicago, Ill.; Charles Cathan, Beloit, Kan.; Albert O. Schwartz, New Orleans, La.; James Neal, Amesbury, Mass.; C. W. Nash, Flint, Mich.; J. C. Moon, St. Louis, Mo.; John Bunt, Fremont, Neb.; John E. Hayford, Newton, N. H.; John H. Mount, Red Bank, N. J.; C. H. Davis, Waterloo, N. Y.; R. J. Corbitt, Henderson, N. C.; C. F. Pratt, Carthage, Ohio; T. J. Storey, Brockville, Ontario; George Waldman, Philadelphia, Pa.; Owen Lilly, Memphis, Tenn.; E. E. Hughes, Lynchburg, Va.; Charles Abresch, Milwaukee, Wis.; S. P. Nichols, Jackson, Ga.; L. F. Weaver, Portland, Ore.

Secretary and Treasurer.—Henry C. McLear, Wilmington, Del.

Executive Committee.—W. H. McIntyre (chairman), Auburn, Ind.; A. G. Brunsman, Cincinnati, Ohio; B. M. Blount, Atlanta, Ga.; Morris Woodhull, Dayton, Ohio; D. T. Wilson, New York; T. M. Sechler, Moline, Ill.; E. M. Murphy, Pontiac, Mich.; Chas. A. Carlisle, South Bend, Ind.; Chas. F. Kimball, Chicago, Ill.; Warren D. Oakes, Indianapolis, Ind.; Charles A. Lancaster, Merrimac, Mass.; George A. Brockway, Homer, N. Y.; Henry P. Jones, Newark, N. J.; Charles E. Adams, Cleveland, Ohio; John Hassett, Amesbury, Mass., and H. C. McLear, Wilmington, Del., ex officios.

Board of Trustees of Technical School.—Charles J. Richter (chairman), 119 West Seventy-third street, New York; Hon. Franklin Murphy, Newark, N. J.; Wm. W. Ogden, Newark, N. J.; Wm. R. Innis, New York; D. T. Wilson, New York.

Freight and Classification.—Theo. Luth (chairman), Cincinnati, Ohio; C. W. Nash, Flint, Mich.; A. G. Brunsman, Cincinnati, Ohio; Clarence Houston, Atlanta, Ga.; Edward W. Kearney, New York; John Hassett, Amesbury, Mass.; W. H. Roninger, St. Louis, Mo.

Committee on Abuses in the Carriage and Accessory Trades.—Perrin P. Hunter (chairman), Cincinnati, Ohio; H. N. Hill, Cleveland, Ohio; G. A. Matthew, Jackson, Mich.; Thomas Clark, Amesbury, Mass.; W. C. Anderson, Detroit, Mich.; Chas. P. Henderson, Savannah, Ga.; Henry Higgin, Newport, Ky.

Committee on New Members.—Warren D. Oakes (chairman), Indianapolis, Ind.; Daniel W. Voltz, Chicago, Ill.; Fred. O. Nuetzel, Louisville, Ky.; A. E. Shafer, Cleveland, Ohio; W. C. Horr, Sidney, Ohio; B. B. Lynch, Baltimore, Md.; Julius W. Gresham, Griffin, Ga.; Charles P. Kimball, Chicago, Ill.; Andrew W. Reitz, Wheeling, W. Va.; J. L. Dann, Tullahoma, Tenn.; A. H. Ahlbrand, Seymour, Ind.; E. Becker, Milledgeville, Ga.; Charles C. Bosher, Richmond, Va.

Committee on Good Roads.—Henry F. Keachline (chairman), Philadelphia; Elton S. Bogle, Los Angeles, Cal.; S. B. Cooling, Wilmington, Del.; J. B. Carmichael, Jackson, Ga.; M. A. Steele, Freeport, Ill.; John P. Staud, Allegheny, Pa.; George J. Koch, New Waterford, Ohio; William Morris, Janesville, Wis.; John L. Mason, Davenport, Iowa; Otto Nack, Mobile, Ala.; Chas. P. Hatch, New Fairfield, Conn.; C. E. J. McFarlan, Connersville, Ind.; Carl P. Schlamp, Henderson, Ky.; George Hackney, Wilson, N. C.; Lambert Hollander, Amesbury, Mass.; W. J. Mills, Watertown, N. Y.; C. F. Ferguson, Defiance, Ohio; C. N. Waterhouse, St. Louis, Mo., and the vice-presidents.

Committee on Fire Insurance.—T. J. Sullivan (chairman), Rochester, N. Y.; Henry A. Brown, Penacook, N. H.; F. B. Hawley, Bridgeport, Conn.; H. A. Moyer, Syracuse, N. Y.; Joseph A. Glesenkamp, Pittsburg, Pa.; L. M. Fitch, Rome, N. Y.; George A. Laws, St. Louis, Mo.; W. B. Smith, Barnesville, Ga.; W. H. Houghton, Marion, Ohio.

SECHLER & CO. REINCORPORATE.

Sechler & Co., of Cincinnati, Ohio, manufacturers of carriage materials, a West Virginia corporation, was incorporated in Ohio, with a capital of $300,000. By the reincorporation the company secures the benefit of the more liberal features of the new corporation laws. C. W. Shipley said the increase of capital was made necessary by recent expansion of the company's business.

When a man has forfeited the reputation of his integrity, nothing will then serve his turn, neither truth nor falsehood.

Digitized by Google

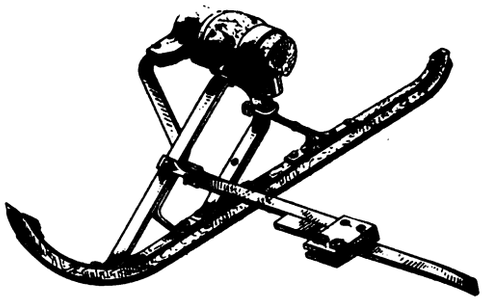
Recently Granted Carriage Patents

Space will not permit us to illustrate all new patents pertaining to the vehicle industry issued by the Patent Office. We therefore select those that we consider of the greatest interest to our readers.

Attachable Sleigh Runner. John E. Hobbs, of North Berwick, Me. No. 901,342. Patented Oct. 20, 1908.

This invention relates to improvements in sleigh runners, and more particularly relates to runners adapted for use in substitution for the wheels upon carriages, wagons, etc.

The present invention is primarily designed as a simplified

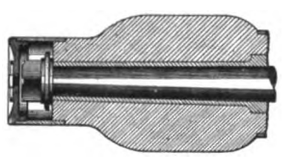


embodiment of constructions hitherto patented by the present inventor, and the object sought to be accomplished is to enable the runners to track the same width as the wheels for which they are substituted, or wider than the wheel's track. To this end the invention contemplates a runner so constructed as to have a predetermined width of track, when a set of the same is assembled upon a vehicle, but at the same time enable the runners being used upon spindles of different lengths. .

One of the claims is in a sleigh runner of the class described, comprising a runner proper, a truss carried thereby and extending upwardly therefrom, said truss having its upper end bent outwardly at slightly acute angles to its body portion, a supporting iron carried by the bent upper end of the truss, a hub mounted upon said truss and said supporting iron and provided with a groove for the reception of said truss and supporting iron, and means for holding the hub upon the truss and the supporting iron.

Automatic Oiler for Vehicles. Fedele T. Musso, of Bowman, Cal. No. 901,460. Patented Oct. 20, 1908.

This invention relates to improvements in oilers and particularly to those used on vehicles, the object being to produce such



a device as will automatically oil the vehicle and at the same time keep the same neat and clean and not oily, dusty and unsightly; also to produce an oiling means which will prevent the necessity of the removal of the wheels, the dropping of nuts in the dirt, the soiling of hands or clothes, or the getting of dust or dirt on the spindles. This object is accomplished by means of closed substantially air tight cups in the outer ends of the hubs of the vehicles and a means for filling said cups with oil and drawing the same onto the axles.

In operation, when it is desired to lubricate the vehicle, the screw plug is removed and the socket filled with suitable lubricating oil, after which the plug is replaced. The felt washer, although allowing the oil to percolate therethrough, is designed to prevent too great a flow of oil from the containing socket to the vehicle spindle; said felt washer may, however, be dispensed with if desired. The socket being provided with tightly fitting outer cap for retaining the lubricant and the washer being positioned as disclosed a flowing of the oil to the spindle of the vehicle for the purposes of lubricating the same will be facilitated upon the revolving of the wheels of the vehicle.

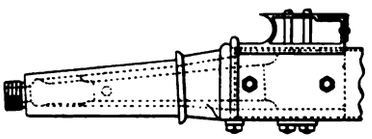
Axle Skein. Samuel K. Dennis, of Chicago, Ill., assignor to International Harvester Company, a corporation of New Jersey. No. 902,214. Patented Oct. 27, 1908.

This invention relates to axle skeins having a common tubular form and designed to be connected to the body of the axle in any preferred manner.

The particular form of skein and axle in which this invention finds embodiment is shown in Patent No. 859,209, dated July 9, 1907, the construction therein shown including a substantially tubular axle comprising a pair of U-shaped bars embracing the inner ends of the axle skeins; the object of this invention being to provide an interior strengthening web that is longitudinally and vertically arranged within the interior of the skein, said web being formed of wrought metal and cast integral with the body of the skein.

The accompanying drawing shows the axle skein, having an interior hollow portion and upper and lower longitudinally arranged ribs, the inner end of the skein being provided with vertically and horizontally arranged openings designed to receive the securing bolts.

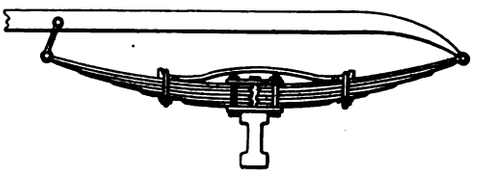
A wedge-shaped plate is longitudinally and vertically arranged within the hollow portion and embedded at its opposite edges



in the metal composing the ribs, said plate being provided with notches on its oppositely disposed edges for the purpose of preventing any relative movement of the body of the skein and said web. It is also provided with an opening at its inner end that is designed to receive one of the securing bolts that connect the skein with the axle. In the construction as shown advantage is taken of a contraction of the metal composing the web in cooling which produces a stress in a longitudinal direction that materially increases the strength of the axle against breaking strains.

Emergency Repair Device for Vehicles Springs. Dudley P. Power, of Rivervale, N. J. No. 902,250. Patented Oct. 27, 1908.

This invention relates to vehicles in general and is designed to produce an emergency repair device for the body springs thereof.



In vehicles of the motor driven class, the breaking of the body springs is of frequent occurrence.

As such accidents usually result in hours of delay and other serious inconvenience, it is the object of the present invention to provide means by which a broken spring may be temporarily repaired in a ready and convenient manner without requiring the aid of skilled workmen or tools, other than an ordinary

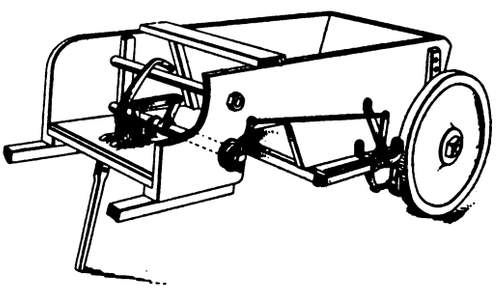
Digitized by Google

wrench. A device suitable for carrying this invention into effect is illustrated in the accompanying drawing.

From experience and observation the inventor has found that in the majority of instances, breaks resulting from the overstraining of body springs, occur directly above the point of support or within the clip by which the spring is secured to the axle. It is the object of this invention to secure and maintain the parts in operative relation, by uniting the broken sections in a manner to at once restore the effectiveness of the spring without greatly decreasing its resilience. For this purpose a bar or rod is employed, preferably of non-resilient metal, which is so shaped and arranged as to bridge, straddle or otherwise extend over the break in the spring. Such bar or rod is then fastened to the spring sections at each side of the break by clips or other suitable means, thus effectually securing the leaves of the spring as assembled within the axle clip.

Wagon Brake. John Wulf, of Omaha, Neb. No. 902,360. Patented Oct. 27, 1908.

This invention relates to an improvement in wagon brakes and its object is the provision of a brake of this character, which is designed to be operated by the foot of the operator and which

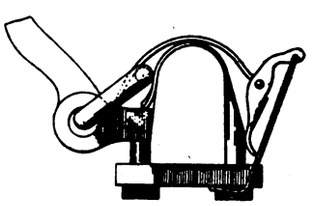


may be readily locked in any desired position to maintain any desired degree of friction between the brake shoes and the wheels of the wagon. Further object is the provision of means for holding the brake in various positions of adjustment fashioned so as to be readily engaged by the foot of the operator to effect the release of the brake.

From the construction it will be apparent that the brake may be actuated solely by the foot of the operator and can be locked in any desired position to maintain the desired degree of friction between the brake shoes and the peripheries of the wheels and can also be quickly and easily unlocked to effect the release of the brakes.

Quick Shifting Anti-Rattling Thill Coupling. Carl E. Sjoman, of Lake Park, Minn. No. 902,614. Patented Nov. 3, 1908.

The object of this invention is to provide a spring for a thill coupling which is adapted to bear against the draft eye and prevent the same from rattling in the clip shackles. A lever is provided for increasing the tension of and securing said spring. A link is attached to said lever and is adapted to engage one of

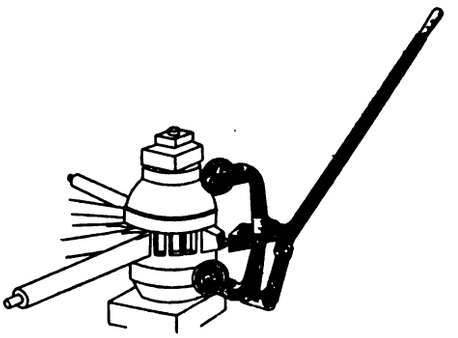


the clip nuts. The said link performs a double function, namely, that of connecting the lever with the clip and also for housing or protecting the free end of said lever in order that the lever may not be accidentally or unintentionally swung.

The coupling comprises the usual clip fastening over the axle and being held in place by the plate. Said clip is provided with the shackles which receive between them the draft eye. The U-shaped bolt has one of its legs passing through the shackles and the eye. Said bolt is not held in position by a nut or tap as is usual, but is retained in place by other means. The spring is provided with a clip which receives the other leg of the bolt. The last said leg of the bolt lies between the upper side of the draft eye and the clip, and the clip bears directly against the side of the clip. The forward end of the spring bears against the rear end of the draft eye and has a tendency to hold the said eye in a forward position with relation to the shackles. Consequently, rattling of the eye with relation to the said shackles is prevented.

Tool for Drawing Bolts, Tenons, etc. Samuel O. Duemler, of Springfield, Mo. No. 902,649. Patented Nov. 3, 1908.

This invention relates to tools for drawing bolts, tenons and the like from bodies in which they are frictionally held, and it is



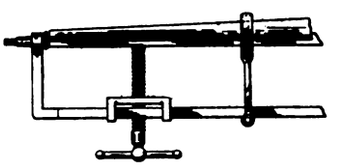
more particularly designed for removing the tenons of broken wheel spokes from the hubs of wheels. Heretofore this operation has been attended by considerable difficulty, it usually being necessary to cut the tenon out of the hub, this requiring the expenditure of considerable time and labor.

The object of the present invention is to provide a tool of simple and durable construction, which can be quickly applied to a wheel hub and which will effectually operate to withdraw a tenon quickly from the hub.

One of the claims is in a tool in combination with a body; of oppositely extending members pivotally connected to the body and having shiftable fulcrums, one of said members having teeth thereon, a toothed lever movably connected to and meshing with the teeth on said toothed member, and an actuating lever pivotally connected to and solely supported by the other member and the toothed lever, said actuating lever being disposed, when moved in one direction, to simultaneously shift said members to pull the body along a straight line.

Axle Setter. James S. Cross, of Wamsley, O. No. 902,716. Patented Nov. 3, 1908.

This invention relates to axle setters, the object being to pro-



vide a setter which can be readily attached to ordinary axle, whereby the axle can be straightened. Another object of the invention is to provide a setter with a pressure screw which is so arranged that it can be readily adjusted, so as to engage the axle at any point desired, so that the axle can be brought back into its normal position after it has been bent by use.

Other objects are to provide novel means for supporting the pressure screw, and for holding the setter on the axle, whereby it can be swung into any position desired, so that the pressure screw can be brought to bear on the top, bottom, or either side of the axle.

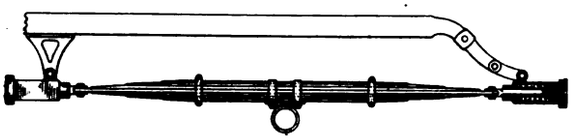
The operation is as follows: The sleeve of the bar is placed over the spindle of the axle, it of course being understood that the wheel has been previously removed, the yoke is then placed over the axle and the free ends secured by the bolt, the frame is then moved along the bar until it is in the desired position, and the srew is brought into engagement with the bent portion of

Digitized by Google

the axle and by applying pressure to the lever the axle will be brought back into its normal position in a very few minutes.

Spring Construction. Charles Burgess, Jr., of Wenona, Ill. No. 902,937. Patented Nov. 3, 1908.

This invention relates to a spring construction, the primary object of which is to absorb the shocks delivered to the frame of a vehicle, to which the spring is attached, when the spring is flexed up or down, and the invention consists in providing a compression member at one or both ends of a spring adapted



to contain oil or air that will permit longitudinal movement of the end of the spring whereby the shock will be absorbed in the compression member and not delivered to the frame of the vehicle.

The accompanying drawing is a longitudinal elevation of the spring construction preferably employed at the rear of a vehicle, for the back wheels.

One of the claims is in a spring construction, the combination of an axle, a frame, a spring secured between its ends to said axle, one end of said spring secured to said frame, and a compression member comprising a casing having a square bore, pivoted to said frame and adapted to contain a liquid, and a piston provided with a square head within said casing having one of its ends secured to the other end of said spring.

Singletree and Doubletree. George P. Simpson, of Marysville, Ida., assignor of one-half to Thomas Gooch, of Marysville, Ida. No. 903,113. Patented Nov. 3, 1908.

This invention is an improvement in singletrees, doubletrees and the like. It is manifestly applicable to singletrees, doubletrees, neckyokes and similar constructions, and has for an object to provide in connection with a body of wood, reinforcing skeins fitting over the opposite ends of the body and extending inwardly to the center thereof and provided at their inner meeting ends with overlapping portions which lap alongside each other, and are provided at their extremities with upturned por-



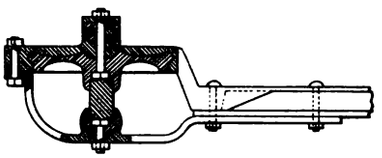
tions which form bearings for the center band whose ends are saparated and made half-round in cross-section and threaded to receive a nut whereby the center band is secured upon the skeins in such manner as to connect the same at their central portions and to hold the skeins securely upon the body. At their ends the skeins are threaded to receive the end bands, which may be provided with loops, and are screwed upon the outer ends of the thimbles, thus forming a secure connection with the thimbles, and binding the same firmly upon the body in the use of the invention.

Fifth Wheel. Ira Teeter, of Chatham, Ontario, Canada. No. 903,241. Patented Nov. 10, 1908.

This invention relates to fifth wheels for vehicles, and its primary object is to provide a fifth wheel of simple, compact and strong construction, wherein conical bearings are provided upon which the movable members of the fifth wheel turn and which serve to relieve the connecting bolts from all lateral strain.

Further objects are to provide means for securing the parts to the axle in a manner to enable the parts to be securely retained in place, and at the same time obviate a weakening of the axle incident in structures of this kind wherein the axle is pierced by the king-bolt, and to so construct the wearing parts as to prevent their wearing loose with use, obviating the liability of said parts rattling.

One of the claims is in a fifth wheel, the combination of an axle, a cap plate, a rotative disk seated within the cap plate and detachably associated therewith to rotate about its axis, said disk having a depending cross bar seated on the axle, said cap plate having integral reach irons which extend onto the reach, a lower cross bar in which the axle is seated, means connecting the cross bar of said disk and said lower cross bar to clamp



them to the axle, a lower brace extending from the reach to the forward edge of the cap plate and crossing said lower cross bar, said brace member having a socket therein, a bearing boss on the lower cross bar seated in said socket, and bolts tying said parts together.

RECENTLY EXPIRED PATENTS OF INTEREST TO THE VEHICLE INDUSTRY.

Patents Expired October 13, 1908.

461,033—Vehicle Wheel Hub. A. A. Minor, Egg Harbor, Wis.
461,158—Road Cart. J. Donovan, Goshen, N. Y.
461,163—Vehicle Pole Tip. H. P. Richards, West Pittston, Pa.
461,190—Vehicle Pole. H. L. Kingsley, Racine, Wis.
461,226—Axle Spindle and Box. H. Wallace, Paris, Ill.
461,248—Draft Equalizer. H. H. Muller, Potosi, Wis.
461,266—Vehicle Axle. J. Lewis, McKeesport, Pa.

Patents Expired October 20, 1908.

461,626—Vehicle Running Gear—J. J. Black, Cleveland, Ohio.
461,645—Road Cart. R. D. Scott, Pontiac, Mich.
461,652—Whiffletree. N. N. Van Pelt, East Orange, N. J.

Patents Expired October 27, 1908.

461,996—Thill Coupling. C. Bassford, Sevastopol, Wis.
462,058—Vehicle Pole. T. McMaster, Central Ridge, N. Y.
462,070—Side Bar Vehicle. P. S. Tartt, Wingo, Ky.
462,168—Vehicle. H. Seeman, Durham, N. C.
462,181—Wagon Axle. D. R. Van Allen, Chatham, Canada.
462,195—Whiffletree Hook. C. W. Blackburn, Tombstone, Ariz.

Patents Expired November 3, 1908.

462,250—Thill Coupling. C. H. Fuller, Norwalk, Ohio.
462,254—Two-Wheeled Vehicle. C. C. Hayes, Penn Yan, N. Y.
462,288—Wagon. J. Wigand, Cleveland, Ohio.
462,308—Draft Equalizer. S. P. Fizell and G. L. Peck, Waltham, Minn.
462,323—Vehicle Spring. N. A. Newton, Kalamazoo, Mich.
462,327—Wagon Jack. P. Peterson, Fremont, Neb.
462,377—Holdback for Vehicles. O. Cummiskey, New York, N. Y.
462,406—Draft Equalizer. H. H. Harnden and C. H. Harnden, Merriman, Neb.
462,536—Spoke Puller. H. Darlman, Cambridge, Minn.

The above list of patents of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City.

RECENTLY GRANTED PATENTS OF INTEREST TO THE VEHICLE INDUSTRY.

899,199—Running Gear. F. W. Bleckley, Hazleton, Pa.
899,104—Singletree Hook. C. C. Enders, Enders, Pa.
899,218—Vehicle Running Gear. M. W. Heyenga, Riverdale, assignor of one-half to M. and H. Barkmeier, Chicago, Ill.
899,061—Vehicle Tire. R. M. Merriman, Youngstown, Ohio.
899,178—Wagon Standard. W. W. Mullen, Bunker Hill, Ind.
899,188—Axle Nut Lock. R. G. Roberts, North Yamhill, Oregon.
899,331—Wheel for Vehicles. W. H. Scrymgour, London, Eng.
899,332—Spring Wheel for Vehicles. W. H. Scrymgour, London, Eng.
899,333—Vehicle Wheel. I. C. Scudder, New York, N. Y.
899,139—Cushion Tire. J. G. Smith, Wahoo, Neb.
899,346—Hub Attaching Device. C. H. Soper, Canton, Ill.
39,576—Design, Automobile Body. O. P. Fritchle, assignor to Fritchle Automobile & Battery Company.
899,660—Fifth Wheel. W. H. Divers, Aurora, assignor of one-half to W. R. Owen, Springfield, Mo.
900,063—Carriage Top. J. P. Fillingham, assignor to Reo Motor Car Company, Lansing, Mich.
899,789—Buggy Top Attachment. E. Ganoe, Sloan, Iowa.
899,790—Running Gear for Vehicles. A. L. Hamilton, Sugartown, La.
899,668—Spring Wheel. H. E. Heaton, Oroville, Cal.
899,695—Whip Lock. W. H. Heliger, Brazil, Ind.
899,669—Vehicle Top Support. W. N. Hurt, Shawnee, Okla.
899,989—Vehicle. C. R. Jesse and R. T. Ware, assignors to Owensboro Wagon Co., Inc.
899,876—Automobile Wheel. J. Laus, Jr., Oshkosh, Wis.
899,877—Vehicle Running Gear. J. S. Lewis, Villisca, Iowa.
899,748—Vehicle Seat. H. C. Martell, Flint, Mich., assignor to Cleveland Hardware Company, Cleveland, Ohio.
899,699—Wheel for Vehicles. W. D. McNaull, Toledo, Ohio.
899,837—Vehicle Spring. J. G. Nolen and J. Shepherd, said Nolan assignor to J. E. Shepherd, Chicago, Ill.
899,797—Truck. R. W. Oswald, Pittsburg, Pa.
899,701—Spoke Extractor. L. P. Parent, assignor of one-half to P. R. Larocque, Waterbury, Conn.
899,611—Wheel. W. H. Parham, Paducah, Ky.
899,923—Whiffletree Attachment. J. Unger, Louisville, Col.
900,049—Laminated Metal Wheel Spoke. J. R. Welch, assignor to

Digitized by Google

American Steel Wheel Company, Alexandria, Ind.
899,934—Wheel. G. Wolke, Jacksonville, Ill.
899,780—Running Gear for Vehicles. V. Zdziarski, New York, N. Y.
89,594—Design, Vehicle Seat. W. H. McIntyre, Auburn, Ind.
900,252—Axle Lubricator. J. Aden, Greensboro, N. C.
900,350—Vehicle Cover. J. H. Brooks, Pocahontas, Iowa.
900,264—Vehicle Wheel. H. Cramer, Sonora, Cal.
900,498—Pneumatic Tire. H. W. Dover, Northampton, Eng.
900,160—Motor Vehicle Truck. R. Fuller, Detroit, Mich.
900,388—Shock Absorbing Mechanism for Vehicle Springs. W. P. Kidder, Boston, Mass.
900,288—Vehicle Shaft or Thill. G. A. Lambert, Anderson, Ind.
900,556—Combined Vehicle Jack and Wrench. D. C. Lassiter, Shelmerdine, N. C.
900,178—Draft Attachment for Vehicle Thills. T. H. Leonard, Piqua, Ohio.
900,562—Axle Spindle. T. L. Martin, Wrightsville, Ga.
900,213—Cutting, Punching and Tire Shrinking Machine. W. T. Sears, Onslow, Iowa.
900,319—Sled Knuckle. O. Smith, Remer, Minn.
900,225—Loading or Unloading Means. H. O. Sparks, Shelbina, Mo.
900,606—Vehicle Unloading Mechanism. H. O. Sparks, Shelbina, Mo.
900,455—Cart. R. Weir, assignor of one-half to P. P. Schnorbach, Muskegon, Mich.
901,274—Thill Coupling. J. S. Alden, assignor of one-half to M. E. Fichte, Nickleville, Pa.
901,079—Buggy Top Brace. J. E. Disheroon, Mena, Ark.
901,165—Axle Lubricator. H. Gearman, Marietta, Minn.
901,173—Clip Hook. H. Johnson, Edgerton, Mo.
900,859—Carriage Axle. R. E. Johnson, assignor to N. Y. Dash & Axle Mfg. Co., New York, N. Y.
901,244—Tire for Vehicle Wheels. E. Kempshall, assignor to Kempshall Tyre Company, of Europe, Limited, London, Eng.
900,937—Sleigh Runner Attachment for Vehicles. F. Korff, Lansing, Mich.
901,114—Obstacle Removing Device for Vehicles. T. Loveless, Upwey, and W. J. Samways, Weymouth, Eng.
901,252—Dray Wagon. G. R. McLeran, North Yakima, Wash.
901,260—Dumping Wagon. A. N. Putney, Palmyra, assignor of three-fourths to I. M. Ludington, Rochester, N. Y.; W. L. Knapp and E. C. North, Palmyra, N. Y.
900,888—Pneumatic Tire. A. C. Rudland, Vancouver, B. C., Canada.
900,891—Vehicle Wheel. G. Somers, Minneapolis, Minn.
901,211—Pneumatic Tire. F. W. Taylor, Ashland, Va.
901,135—Sled Knee. R. S. Wells, assignor to E. Bement's Sons, Lansing, Mich.
901,054—Vehicle Tongue. C. D. Wright, Palestine, Ill.
901,866—Self Lubricating Wheel. H. Atkinson, Charleston, W. Va.
901,670—Brake Mechanism. A. Balloco, assignor to Societe Anonyme "Itala" Fabrica di Automobili, Turin, Italy.
901,604—Sleigh. E. Ferriss, Napoleon, N. D.
901,342—Attachable Sleigh Runner. J. E. Hobbs, North Berwick, Maine.
901,907—Wheel. A. L. Jiminez, assignor of forty-five one-hundredths to W. Freeman, five one-hundredths to J. L. Jiminez, and one-twentieth to J. M. R. Carrera, New York, N. Y.
901,451—Vehicle Brake. J. K. Kendrick, Germantown, Cal.
901,735—Vehicle Frame. C. J. Pembroke, Rochester, N. Y.
901,751—Spring Wheel. J. E. Stannard, assignor of one-half to F. J. Miles, Springfield, Mass.
901,568—Wheel. H. M. Verplanck, assignor to Lansing Wheelbarrow Company, Lansing, Mich.
901,766—Moving Van. A. B. Yetter, New York, N. Y.

Copies of above patents may be obtained for fifteen cents each, by addressing John A. Saul, solicitors of patents, Fendall Building, Washington, D. C.

OBITUARY

Geo. V. Deal.

No death has caused such a gloom to spread over the city of Jonesville, Mich., in many years as has come with the death on November 17 of George V. Deal, manager of the great manufacturing industry of that city, The J. J. Deal & Son Carriage Company, founded in 1857. Mr. Deal was ill for some time, and recently recovered to such an extent as to resume business at his office, but abscesses formed in the head, which caused his immediate death. George V. Deal was a Jonesville boy, reared there and finished his business education at the Hillsdale college. He is survived by a wife and five children.

George J. Cram.

George J. Cram, secretary of the Pontiac Buggy Co., Pontiac, Mich., died of cancer on November 7 at his home in that city, after an illness extending over a period of several weeks.

Mr. Cram was able to attend to his duties as secretary of the Pontiac Buggy Company up to four weeks before his death.

Mr. Cram was born in Lindsay, Ont., in 1860. He removed with his parents at an early age to Marseilles, Ill., where at the age of 19 years he accepted a position with the Marseilles Manufacturing Co. He remained in the employ of this firm for 18 years and was for nine years the secretary and treasurer of the company. Eight years ago Mr. Cram removed to St. Louis, Mo., where he had accepted a position as manager of the Missouri-Moline Plow Company. Four years ago he gave up that position to come to Pontiac as secretary and sales manager of the Pontiac Buggy Company.

Deceased was a man of exceptional business ability and integrity, and was beloved by everyone who knew him for his sterling honesty and unselfishness. His judgment in business matters was always sought by his business associates, and could always be relied upon. His business dealings carried him to different parts of the country and wherever he went he made warm friends. He is survived by his wife, two sons and a daughter.

A. M. Huntington.

Alexander M. Huntington, one of Amesbury's late carriage manufacturers, died November 14 at the age of 82 years.

Mr. Huntington received his early education in Amesbury. He has been a selectman, serving the board as chairman, also town treasurer, a representative to the legislature.

In the great gold excitement of 1849 he caught the fever and went to California by way of the Isthmus of Panama.

Jacob Rummell.

Jacob Rummell, a retired manufacturer of carriages of New Castle, Pa., and one of the best known men of that city, died November 17 from a paralytic stroke.

Mr. Rummell was born in New Springfield, Mahoning county, Ohio, and would have been 75 years old next spring. He had resided in New Castle fully sixty years and was for many years in the carriage manufacturing business, until he retired ten years ago.

Charles Betz, Sr.

The recent death of Charles Betz, Sr., Philadelphia, was a great loss to his hosts of friends. The deceased was well known in the carriage and wagon trade of Philadelphia, and was a member of many fraternal and social organizations. He was seventy-six years of age.

ENORMOUS VALUE OF SLACK COOPERAGE.

The farmer with his potatoes and his apples, the miller with his flour and meal, the hardware man with his nails, the cement manufacturer and the many other users of the faithful slack barrel, that combination of staves, hoops and heading, which is not intended to hold water or something stronger in fluid form, used forest products last year having the enormous value of $15,800,253.

News of the Trade

BUSINESS CHANGES.

Clay, May & Son have sold their wagon and implement business in Temple, Tex., to L. S. Williamson & Co.

A. E. Achterberg has purchased the buggy and implement business of John Whaler, in Lincoln, Neb.

Chas. Bofink has sold his vehicle and implement business in Jefferson, Ia., to C. L. Smith.

D. W. Ferguson has sold his stock of vehicles, etc., in Gothenburg, Neb., to G. Shostrom.

J. M. Pearce & Co. have sold their vehicle and implement business in Gifford, Ida., to Spexker & Wagner.

McCoy Bros. have purchased the vehicle and implement business of A. N. Miller, in Panora, Iowa.

M. C. Joyce has sold his hardware and vehicle business in Syracuse, Neb., to Fellers & Seymour.

David Hurtig has purchased the interest of Ben Myers, in the firm of James & Myers, in Delphos, Kan.

W. L. Lein has purchased the business of the Minneapolis Buggy & Implement Co., in Minneapolis, Kan.

Digitized by Google

Van Scyoc & Son have sold their stock of vehicles, implements, etc., in Luray, Kan., to J. N. Armsbury.

Geo. P. Shirts has retired from the implement and vehicle business in Cameron, Mo., selling to Shirts & Ammon.

A. Walden has succeeded to the carriage and hardware business of A. Walden & Son, in Graymont, Ill.

Leach & Swanson, of Fort Morgan, Col., have sold their hardware and vehicle stock to the C. V. Nichols Implement Co.

I. J. Berg has sold his wagon manufacturing business in Baltic, S. D., to Gulbranson Bros.

Johnson & Nelson have sold their vehicle and implement business in Onida, S. D., to Wm. F. Gromer.

J. A. Bellar has sold his vehicle business in Parkville, Mo., to E. M. Nolan.

Frank Benesh has sold his vehicle and implement business in Vining, Ia., to Frank Chamra.

John Atwood has sold his buggy and implement business in Morefield, Neb., to Chas. Brittenham.

J. P. Ford has sold out his vehicle business in Pommeroy, Wash., to Morris & Tewglt.

W. E. Kinney has sold his vehicle and implement business in Shelby, Neb., to Schmidt & From.

C. A. Edwards has succeeded to the buggy and implement business of Colatt & Edwards, in Salem, Ia.

MISCELLANEOUS.

Michael J. Dunn & Co., are erecting a new carriage factory at Springfield, Mass. The structure will be three stories, 40 x 106 feet, brick and brownstone.. A blacksmith shop 40 x 55 will be attached to the main building.

The spoke factory recently erected by O. D. Chronister & Son at McEwen, Tenn., has begun operations.

The wagon works of Mall & Dey, Egg Harbor City, N. J., which recently went into receivers' hands, will again be put into operation by a new firm known as the Egg Harbor Wagon Works.

William B. Boyd, a carriage manufacturer of Baltimore, Md., has filed a petition in bankruptcy.

The name of the H. T. Hearsey Vehicle Company of Indianapolis, Ind., has been changed to Hearsey-Willis Company.

Hugyard Bros. are building an addition to their carriage factory in Houlton, Me..

J. K. Kratzer, founder and for many years the executive head of the Kratzer Carriage Company, of Des Moines, Iowa, retired as president of the firm at the annual meeting of the stockholders.

The Pioneer Pole & Shaft Co., of Piqua, Ohio, contemplates establishing a plant in Greenwood, Miss. F. F. Frappie will be the local manager.

The Rawson Hardware Co., of Williston, N. D., will erect a new vehicle and implement warehouse.

S. Warburton & Bro. are remodeling an old hotel in Germania, Ia., into a vehicle and implement house.

Augustine & Wilson will remove their stock of vehicles, etc., in Red Wing, Minn., into larger quarters.

Cranford & Snyder will build an addition to their vehicle manufacturing plant in Winston-Salem, N. C.

W. D. Coggeshall, of Darlington, S. C., is reported to be seeking a location in Oklahoma for a wagon factory.

NEW FIRMS AND INCORPORATIONS.

The Grinnell Vehicle Company, of Marshalltown, Iowa, has been organized with a capital stock of $10,000.

The Broughton Buggy Co. has been organized in Elizabeth City, N. C., by W. T. Old and others.

Alva George is about to engage in the vehicle business in David City, Neb.

The Tennessee Spoke Works has been incorporated in Knoxville, Tenn., with a capital stock of $10,000.

The Kinnell Manufacturing Company has been organized in Pittsfield, Mass., for the purpose of manufacturing vehicles and harness. Capital, $90,000.

The Alexander Kulp Buggy & Harness Co. has been incorporated in Paducah, Ky.

E. Tunks is about to engage in the vehicle and implement business in Hebron, Neb.

The Suspension Ball Bearing Co. has been organized in Charlotte, N. C., to make ball bearing hubs and wheels.

The Grinnell Vehicle Co. has been incorporated in Grinnell, Iowa, with a capital stock of $10,000.

Coley & Barnard have opened a hardware and vehicle store in Hollis, Okla.

AUTO INCORPORATIONS.

Thomas Resilient Wheel Co., of Elmira, N. Y., has been organized to manufacture wheels and other appliances; capital, $25,000. Incorporators: George H. Thomas, George A. Davies, Charles R. Murphy, Charles F. Thompson, Thurlow W. Cleveland.

The Kayton Taxicar and Garage Company, of New York City, has been organized with a capital of $100,000.

Apperson Brothers Automobile Company has been incorporated at Kokomo, Ind., by Elmer Apperson, E. L. Apperson and A. G. Siberling. Capital, $400,000.

The White Tire Company has been incorporated in New York City with a capital of $250,000.

The Triumph Automobile Tire Company, of Homestead, Pa., has been incorporated under the laws of West Virginia, with a capital stock of $1,000,000.

The C. A. Coey Auto Co. has been incorporated with a capital stock of $75,000, in Chicago, Ill.

M. C. Tunison and others are interested in the establishment of an automobile factory at Redondo, Cal.

The Chansler & Lyon Motor Supply Co. has been incorporated in Seattle, Wash., with a capital stock of $50,000.

J. P. Bertschy is soon to open an automobile factory in Council Bluffs, Iowa.

The Darling Automobile Company has been incorporated in Auburn, Me. Capital, $10,000.

The Hitchcock-Banks Motor Car Company has been incorporated in Providence, R. I., with a capital of $25,000.

The Merkel Light Motor Car Company has been organized in Pottstown, Pa., with a capital of $150,000.

The Bradley Tire Protector Company has been incorporated at Fort Worth, Texas, with a capital of $20,000.

The Wheeler & Wuesterfeld Company has been organized at New Haven, Conn., with a capital of $4,500 for the purpose of dealing in automobiles.

The Economy Motor Buggy Company has been incorporated at Joliet, Ill. The capital stock is $60,000, and the incorporators are J. C. Flowers, H. L. Thompson and J. F. Beurette.

The Morgantown Automobile Company, of Morgantown, W. Va., with a capital of $10,000, has been incorporated.

The Bendix Automobile Co. has been organized at Logansport, Ind., by V. Bendix, C. Calhoun and others. Capital, $200,000.

FIRES.

D. G. Matthews' carriage factory at Pottsville, Pa., has been destroyed by fire.

The wagon works of N. A. Alexander, Piedmont, Ala., has been destroyed by fire. Loss, $4,000.

The buggy store of Dawson Bros., in Abbott, Tex., has been destroyed by fire.

The buggy and implement stock of John Davis, in Deer Creek, Minn., has been destroyed by fire, with a loss of about $10,000.

The plant of the Agee Wagon Works, in Camden, Ark., has been destroyed by fire, with a loss of $75,000.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

Cheaper Automobiles.

The spirit of progress and the spirit of competition are probably unitedly responsible for the cheaper automobiles which are crowding their way to the front. Declining cost of production and improvement in quality are characteristic of industrial and commercial progress. The outcome may be summarized as increased efficiency and greater durability. During recent years a number of causes have contributed to the postponement of the time when a first-class and cheap car would be placed on the market. Even during the period which price was altogether a secondary matter cheapening influences which have lately cropped out were actively at work.

There is at present a strong influence behind the cheaper auto which will meet all practical demands. The basis of the new car is necessity. No more is put into or onto it than cold necessity demands. There is an absence of elaborate body work—it is plain, straight and strong. Its "parts," however, are good—no defects, no inferiority, nothing second-class. The machinery is of the highest type, but there is lacking that fine differentiation in quality that is respected in high-priced auto work; that is to say, steel is used which has a wider range of utilities than special steels. Some branches of automobile building is made costly by reason of special steels and high priced products. The cheaper auto builders are using less specialized steels and less expensive elementals. The more modern builders, full of practical ideas, are eliminating finely spun requirements and every other demand for supposed excellence.

They use steel not of the highest grade, but good enough and well finished. They use die forging processes, which is a saving, and the products of which are easily fashioned into shape. Certain "parts" can be produced for much less than more highly resistant steels.

Every branch of automobile building has thus been put through a sieve, or a press, and every unnecessary element of cost removed. Besides changes in methods of manufacture have been introduced, and in some branches less expensive labor is employed. However, the basis of a cheap and reliable car has been successfully laid, and the one phase of the industry is on the eve of a very important development.

The Center of Attack.

The contest which is waged by inventors and mechanical experts against some of the fundamental requirements of the automobile is interesting. All old types of igniters must go, shouted confident inventors a year or two ago, but the magneto stays. We were to have new types of clutches built on a different principle, and which would scatter present clutches to the winds, but the multiple disc type remains in spite of the creditable efforts made to supplant older clutches. And there were brakes. The long standard styles were written down and out by enthusiastic experts, who were confident they had something better under their hats; but the brakes are staying, and certain new fangles are eyed suspiciously by builders and by purchasers as well.

But this persistent hammering is all right. Progress is the daughter of discontent. The automobile of to-day is a triumph of genius, in which many geniuses participate. Nothing is accepted as final. Not even well established mechanical principles are conceded to be safe from upsetting. No other product of human wit and mechanical instinct was ever the center and object of so much inventive skill and constructive effort. It would be dangerous to prophesy its future.

Unfair Objections.

Builders of commercial trucks have enough to overcome without being made responsible for the faults and shortcomings of others. A truck is a complicated and, in some respects, a delicate machine. Its construction creates certain requirements in its treatment. It has its limitations. It needs attention. Too generally its shortcomings, as alleged, are not shortcomings, but the inevitable consequences of inattention to certain absolute requirements which its construction creates. Too generally the driver is a transferred driver of a horse vehicle, and who has not the instincts of an engineer, machinist or an electrician.

Then again, more is expected from a commercial truck than is reasonable. There is often no daily inspection, or only a surface one; there is perhaps no cleaning which is essential; in short, lack of proper care often puts the commercial truck in bad odor.

When properly looked after they are demonstratably cheaper is the claim of their builders. But it is not cheapness in its narrow sense that induces most users to use them. The advantage which counts is the broader and higher range of utility and capacity, the greater number of daily trips, the heavier loads, the greater speed, the ability to handle a larger business and the gratified assurance users have that they can meet all probable delivery demands without strain.

The High-Wheel Motor Buggy.

One of the most interesting developments of the vehicle industry is the progress shown in perfecting this really national evolution of the motor applied to a type of vehicle with which the greatest number of people are familiar.

The long-base car with its tonneau, or its limousine body supported by its chassis, is of exotic origin; its very terms are unfamiliar and have to be anglicized in order to make them fit the lips of the Yankee. To be sure, it is a splendid example of the ingenuity of the engineer, the art of the coach body builder, and the psychological attraction of a high price appealing to the

Digitized by Google

purses of spendthrifts, generous people, who want what they want when they want it.

It is known and quite generally conceded that its up-keep is a large item that must be added to the first cost, so that it becomes, in the end, a real luxury fit only for the pleasure of the very well-to-do.

As a town car its long base makes it difficult to manage in narrow streets; as a touring proposition, it is very liable to break down at most untoward moments, and when run at a very high speed its low wheels cause it to quite exceed the jumping ability of the kangaroo; and yet, withal, it is a very fine vehicle to have in the barn, and its very wide employment is the best proof of its serviceability.

It is not necessary to descant further on the low-wheel auto. What has been said has been more to build up a parallel and institute a comparison than to disparage an established type of vehicle.

It is to a consideration of the possibilities of the high-wheel motor buggy that we wish to direct attention of readers. This is an evolution that the vehicle builder may claim as his very own, and whose future is his personal concern—and profit.

It is a vehicle that he can and will build in its entirety. Its body and running parts have been long familiar to him. The refinements and economy of its construction have been the staple of his daily endeavor for years, and there is nothing about that part of the manufacture of which he is not a past master. It has only become a problem of adapting to it a motor that shall be cheap, durable, simple and easily controlled by the driver. Even in this new departure of the work the carriage builder has made his smith-shop the machine shop for such purpose, and is thus a builder of the entire vehicle in the true sense. It is plain to be seen that when familiarity with this branch of the work makes him as proficient as he already is with the body construction, this country will witness the production of a distinctly new type of vehicle, the exclusive product of the buggy builder, that will mark a new era in vehicle building whose benefits will be widespread, and whose cost will be very moderate, indeed, as compared with the prices which we are now accustomed to quote for the car.

Consider what such an evolution means to the buggy builder. It opens a new and very profitable trade. It puts him to his trumps as constructor, where the reward will well repay his thought and his unremitting ingenuity. The builder who has followed the Chinese plan of servile imitation, without thought of originality, will not be a severe competitor against the builder who has always supplied the ideas and the initiative, because there will be a way to protect by means of the patent-right very essential features that embody true originality.

But why will this new type of vehicle create such a wide field for itself? Its most striking merit lies in the fact that it can take ordinary road obstructions at high speed, because of its high wheels, without jouncing the passenger off the seat as if he were a tennis ball. That makes for comfort as well as safety.

It obviates the use of inflated tires, and the cost that accompanies such tires. Hard rubber will answer every purpose. Of course, it follows that durability will be a prime factor. The high wheels afford a clearance that will enable the buggy to negotiate bad roads with the same facility that the buggy of today wades through the mud and over the bumps.

As the buggy is a feather-weight as compared with the heavy auto, the motor can not only be of less horse-power, but the power can be concentrated on moving the vehicle in place of being largely consumed in moving the dead weight of a heavy construction.

The engine, being smaller and much more simple in design, the owner will not have to go to school, or take out an engineer's license, in order to know how to control the mechanism, and there will be fewer intermissions on the journey devoted to tinkering and repairs. This has its moral side. It will reduce the labors of the Recording Angel.

Last, and by no means least, is the consideration of cost. The nerve of the buyer will be very sensitive and responsive to such an appeal, and it will be made in a most satisfying measure. He will be offered speed, endurance, trustworthiness, all at low first cost, and the assurance that the up-keep will be practically a negligible consideration.

In view of the foregoing we think we are within the mark when we say that the buggy builder has before him a field that will be a great impetus to the industry of vehicle building, with a future replete with the brightest promise.

THE FUTURE OF THE AUTOMOBILE.

Alfred Reeves, general manager of the American Motor Car Manufacturers' Association, in an address recently made on the automobile's future in America, said:

As a firm believer in the excellent work which the Y. M. C. A. has done and is doing, and with very fond recollections of the time when I, myself, was an active member in the city of my school days, it affords me great pleasure to say a few words to you on the subject of "The Automobile's Future in America," as relating especially to the opportunities it offers as a field for employment.

The statistics of the past ten years are our main guidance for the future of this great industry. Many of the early figures are lacking, but it is safe for us to say that the automobile sales in 1903 were considerable less than $8,000,000, which has increased to over $105,000,000 in 1907, while this year's figures, when compiled, will show almost, if not about the same, despite the recent financial depression. During 1907, something like 52,000 cars were made and sold, and this year will supply about the same figures, although most of them are of the small type. To transgress a bit, it is worth noting that the automobile business has suffered in volume less during the past twelve months than any other line, although the increase was on the side of cars selling for $1,500 or less. It is estimated that the present capital of the automobile business is about $105,000,000, with an additional $36,000,000 in kindred trades, and $57,000,000 more in garages and retail salesrooms, making a total of $198,000,000. According to the latest figures obtainable, there are 58,000 employees in the automobile factories in this country; about 29,000 employed directly in the making of parts, while there are 21,500 in the sales and garage establishments. This gives a total of more than 108,000 employees.

The records at the office of the American Motor Car Manufacturers' Association show that there are in this country 253 builders of automobiles, of which at least 125 are beyond the experimental stage, and are placing practical cars on the market. There are not less than 500 different trades involved in automobile manufacturing, running from leather, varnish, broadcloth and buttons to steel, brass and rubber.

Although the importation of automobiles is fast decreasing, it is a fact that some $28,000,000 worth of foreign cars have been sold here. The trend is now going the other way, and the export trade of the American maker is increasing rapidly. It doesn't take very much of an imagination to figure that with our business methods, our unexcelled mechanics, our wonderful automatic machinery and our perfect factory systems, America will continue its lead in motor car building, both here and abroad.

With 52,000 cars as a conservative estimate for this year, it is safe to say that 175,000 automobiles have been sold here during the past eight years. They are big figures, but it is a big industry.

During the past year 13,980 cars have been registered in New York City alone, making a total registration since the law went into effect of 63,338 cars. Above all, and of great interest to those about to enter the trade, is the fact that 9,386 new chauffeurs were registered during the current year. One cannot be a pessimist on the automobile's future in the face of such figures. What of the future of this greatest improved individual transportation of man? The past makes good reading and good history, but, as a matter-of-fact-people, we are interested in what confronts us.

Factory reports indicate a tremendous production in motor cars for next year, running from machines that range from $150 for the school boy to $11,000 cars for the luxury-loving and speed-fascinated millionaires. Four factories alone announce a total productioin of 36,000 cars, two of the leaders planning to turn out 12,000 cars each. Yet there is no reason to believe that next year will see an over production, provided good cars are made and sold at reasonable prices. The tremendous buying power of this country is evidenced in a score of ways, and particularly by the absorbing of motor cars during the past two

Digitized by Google

years. Possibly next year's production will reach 75,000 cars. Yet we well know for the past five or six years a million buggies a year have been made and sold by the carriage people. Just what becomes of then no one has been able to say, but the buggy manufacturers continue to turn out these great quantities of horse-drawn vehicles. They are now turning their attention to motor vehicles, for the farmer is demanding the more modern type, for which he is quite ready to pay the price. One of the largest concerns of agricultural machinery plans to make 20,000 cars next year, yet this will hardly give them one a piece for their agents throughout the world.

Taxicabs are fast coming into use, and there is hardly a city of any prominence throughout the country which will not have occasion to use them. Americans are a cab-riding public, and their disinclination to use cabs before the introduction of the taxi was because of their disinclination to become involved in a fight. Hiring a cab, up to this time, always required a fight either over the charge before the beginning of the ride, or a fight on the overcharge after it. Last year, in Paris, I was told that some 3,500 cabs were in use, which now has increased to almost 5,000. There are 1,500 cabs in London, and the number is constantly increasing. The foreign cities will use more cabs owing to their poor transportation methods in other lines.

Last, but not least, we have the unlimited field of the commercial vehicle. Who can say that the future will not see the horse relegated to a life of leisure, that he has well earned, while his work is performed by mechanically driven vehicles using gasoline, kerosene or alcohol in explosive motors. As there will be no horses to take up room, and as they will carry twice the load and travel at twice the speed, it will be like widening the streets threefold. And the improved sanitary conditions admit of no argument.

This is hardly a fair presentation of conditions governing the future of motor cars in America. One could go on and talk for hours on the new fields that are opening up in connection with the motor trade, all of whom require students and capable men of your type to manufacture, to sell and to care for them. In the equipment of a man for this work, the keynote must be thoroughness. Nothing slip-shod can work out well in this great industry, and a careful preparation and constant attention to details must be a part of the man who would secure the rewards which the automobile industry offers.

If your would know a man's real nature let him be indebted to you for money or for favors.

EIGHTEEN HORSE POWER COMMERCIAL AUTOCAR.

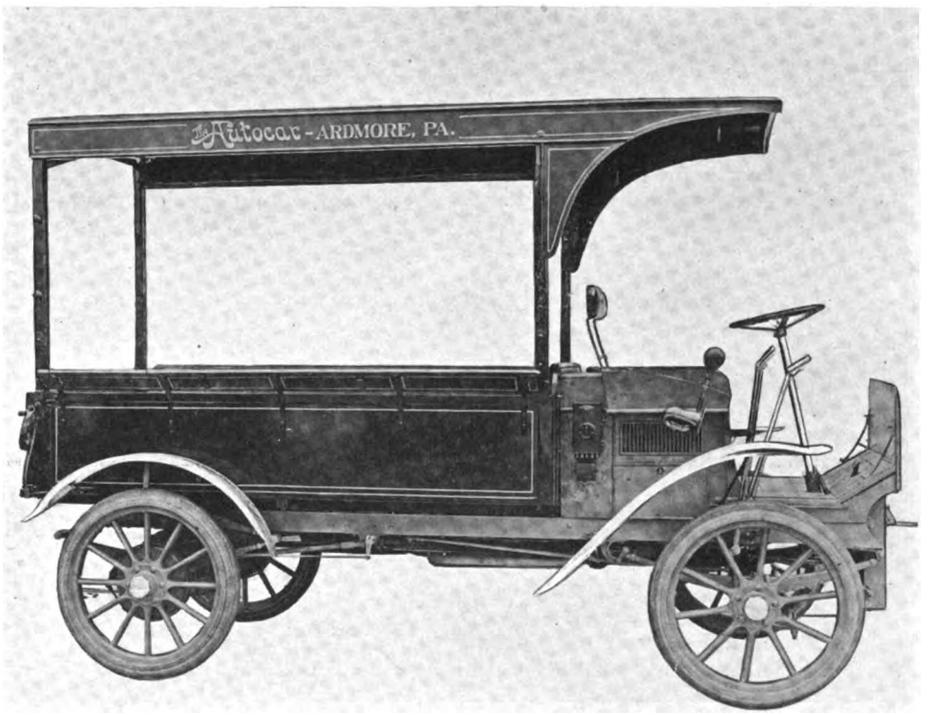
Illustrated on this page.

The engineers of the Autocar Company, of Ardmore, Pa., have designed a car to meet the requirements of an exacting and diversified service, resulting in a power plant that is accessible, powerful, durable, simple, compact and rugged.

By the location of the driver's seat over the power plant, a maximum body platform on a minimum length of wheel base is attained. This arrangement in no way detracts from the accessibility of the power plant, the seat being hinged for quiet removal.

The capacity of this car is 2,000 lbs. The tread is 56 in., and the wheel base 85 in. or 97 in. Springs are full elliptic rear and half elliptic front. The motor is two-cylinder opposed, developing 18 horse power.

The cooling system consists of water, with fly-wheel fan and gear driven centrifugal pump. Transmission is three-speed progressive. Speed of this car is from two to twenty-five miles per hour, and its gasoline capacity twelve gallons. The manufacturers supply the chassis separately, upon which a carriage or wagon maker can place any style of body, or will furnish it complete.



Eighteen Horse Power Commercial Autocar.
Described on this page.

AUTOMOBILES IN SPAIN.

Bilboa, Spain, is a city of about 80,000 inhabitants, with many wealthy residents. There are three dealers in automobiles in the city, who are also equipped for repairs. The cars most popular in this section are those of French manufacture, and the demand is for the more expensive car. There are no direct steamship connections with American ports.

Tarragona is a city with a population of 19,000, with several wealthy inhabitants. On account of its proximity to Barcelona, it is practically dependent on the latter city for its supply of imported manufactured goods. At present there are no dealers in automobiles in Tarragona, nor is there a single car owned here.

Digitized by Google

ABOUT AUTOMOBILE SPRING SUSPENSION.

By Thomas J. Fay, President Society of Automobile Engineers.

The reason for the adoption of springs will best be understood if we take into account a version of the law of the application of forces. As, for illustration, if a "tup" is tripped and it falls 10 feet, provided it weighs 100 pounds, the energy of position of the tup will represent 1,000 foot pounds, and when it strikes the energy will be expended, manifesting itself in heat and other vibrations. It cannot be said that the effective force of the blow will be as 1,000 foot pounds, because the effectiveness of the impact of the tup will depend upon the distance in which the motion is arrested. If, for instance, the motion is arrested inside of a distance of one inch after initial contact, the blow will be equal to, say, unity. But if the blow is arrested within one-half inch after initial contact, the force of the blow will be doubled. But should the anvil give but a thousandth of

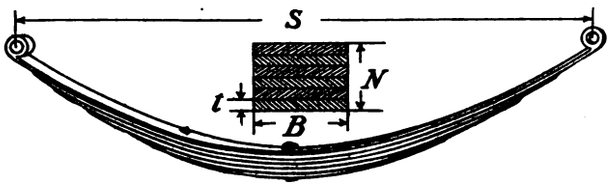


Fig. 1—Half elliptical spring, showing sections referred to in the formula.

an inch, the force of the blow will be equivalent to one thousand times the force as first put down.

In this we have an illustration of the fact that it is not the weight of the body or the distance it migrates that goes to make the sum total of results; indeed, it is a question of the distance in which motion is arrested for the most part. Coming down to the automobile, it is plain to be seen that the spring suspension of a chassis frame and the superimposed body will be effective in proportion as the springs show capability, by way of arresting the motion within the distance said to be agreeable and at a periodicity of the pendulum action also said to be agreeable.

Obviously, then, there is no standard to go by, because what one man calls agreeable, another may call something else. On the other hand, this question of what constitutes an agreeable motion can be put to some extent in dollars cost, since the anticipations of pleasurable riding will depend considerably upon how much the autoist has to pay for the pleasure. If a car is high in price, and the spring action is so terrible as not to compare favorably with the spring action in comparatively low

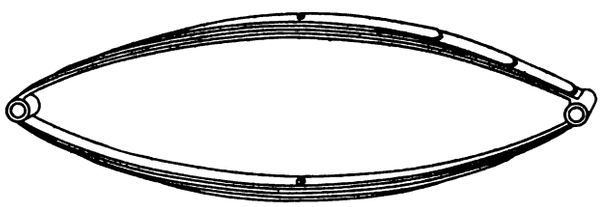


Fig. 2—Full elliptical spring.

priced cars, the unlucky autoist will consider the action disagreeable, and justly so. If, on the other hand, a car is very low priced, the purchaser thereof may be quite well satisfied with a very inferior spring performance. He may, for that matter, get all that he pays for. Under these conditions, it is difficult to appreciate what should constitute the standard spring suspension from the point of view of result, rather than the point of view of the manner of suspension.

If some types of springs do the work, affording better results than do others, it would seem as if the springs of the inferior results should be eliminated. On the other hand some types of springs work well on certain classes of cars and are valueless in in other cases. This being so, it does not follow that all springs should be of the same type and all cars should be swung in the same way.

Several Types of Springs.

In relation to this matter it might be thought the types could be arranged after some fashion logical. On second thought it is to conclude there is no logic in this connection, because the several types of springs were used from time to time on all the types of cars extant. It will not seem out of place, therefore, to enumerate the types of springs largely as they appear on cars at the present time. They may be set down as follows:

Half elliptical; full elliptical; full elliptical, one end scroll; full elliptical, both ends scroll; three-quarter elliptical; three-quarter elliptical, one end scroll; three-quarter elliptical, riveted end; platform; concord; helical.

The most popular of these types of springs are shown in the illustrations, and each of them will be found in cars, unless it is a fact that the helical spring is no longer used as a direct suspension, nor has it ever been to any great extent, although it is well represented in the shock absorbers of the day.

Considering laminated plate springs, since they are all modifications, they can all be resolved through the use of a single formula by a step to step process. Such a formula, for illustration, might be as follows:

$$N = \frac{W\ S\ k}{B\ t^2}$$

in which:

S — span in inches;
B — breadth of plates in inches;
t — thickness of plates in 1-16 inch units;
W — load in tons (2,240 pounds);
N — number of plates;
k — a figure of convenience — 11 in ordinary work — 15 in the best automobile practice, and can have values between 11 and 15 as the exigencies of the service may indicate.

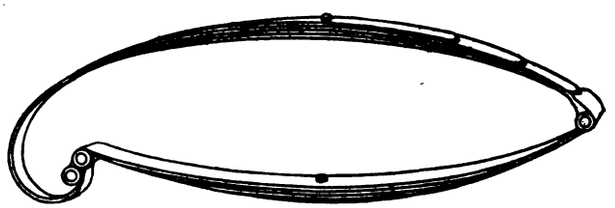


Fig 3—Full elliptical spring—half scroll spring.

In laminated springs, ribbed cross sections are more rigid and much used in commercial vehicles, also in connection with pleasure automobiles abroad, otherwise, the plates are usually with round edges, but are not flat, as may be generally supposed. They are concave, and the difference of the thickness at the center is about equal to 1 B. W. G. thickness. Such plates are used in sizes as follows:

B. W. G. Nos.	Thickness in inches
0	.34
1	.30
2	.284
3	.259
4	.238
5	.22

In automobile work there are few, if any, examples of springs, in which the thickness of plates will be found, to be thinner than No. 5, or thicker than No. 0, B. W. G.

In some cases the plates are quite rectangular in section, the edges being flat, with a slight radii at the corners. In other cases the spring leaves are ribbed. There is one other point, as shown in Fig. 7, which takes into account the contours of the ends of the short plates. It is believed by some spring makers, and the author has a superstition or two in relation to the same matter, that the behavior of a spring is effected by the shape or contour of the ends of the short leaves or plates. At all events, the short plates should be tapered down toward their ends, and if a supple

Digitized by Google

spring is the aim of the designer it might even be well to terminate the ends of the short leaves in what is designated as the "French" contour. This contour looks very well in the finished product and possesses the advantage of more gradually bringing the shorter leaves to the support of those of greater length.

While this question of suppleness of springs, which might otherwise be termed easy riding qualities, is on the tapis, it will not be out of place to discuss some of the means by which easy riding qualities may be arrived at. In the first instance it is passing strange that the designers of some cars should expect any one to furnish springs such as would afford easy riding qualities. Take, for illustration, a limousine of the most approved artistic appearance, let us say of aluminum, and at a cost of $2,000. If the aluminum is backed by plaster of paris and a goodly showing of hardwood, by way of a framing, and if this limousine is hoisted by means of a traveling crane—suggested

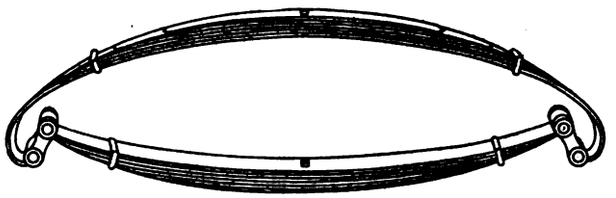


Fig. 4—Full elliptical spring—both ends scroll.

because of its weight—onto the chassis of a car in which the center of gravity might be high, not taking into account the effect of the body, as above described, the work the springs would have to do can scarcely be regarded as coming within the province of springs.

The conditions are not all included, because it is just such a body and just the car described that will have a water tank on the deck of the limousine and perhaps two or three tire cases and other paraphernalia. The "top hamper" will, therefore, mount up to figures quite beyond the "top hamper" that should obtain, even under more favorable conditions. There are no springs, either by way of types, or in the matter of design, that will afford easy riding qualities under the conditions as above illustrated Indeed, it may be fortunate, but it is a fact, too, that there are no tires that will sustain under such conditions, and so we may say, if the spring problem is severe, the tire problem becomes impossible.

(To be continued.)

A NEW LUMINANT.

Consul Joseph G. Stephens, writing from Plymouth, England, says that it is claimed by two different parties, one of whom resides in that English district and whose invention he has examined, that from 50 to 75 per cent. can be saved on gas bills by the use of a new petrol-air gas.

The gas is made by the carburetting of air with a small proportion of petrol vapor, the resultant mixture being highly illuminating, non-explosive, without smell, and without injurious effects if inhaled. Applied to special burners it burns with great power and gives off sufficient heat to be serviceable for either cooking or heating purposes as well as for lighting.

This gas costs just under one shilling (24 cents) a thousand cubic feet to produce. A 125 candlepower burner when in use costs one-fifth of a cent an hour and will light a large room. For the cost of two cents enough gas can be supplied for eight hours to a radiator capable of heating an ordinary room.

The mechanism which makes the gas is small, compact, and simple to work. A producing plant capable of supplying twenty-five lights can be made for about $100.

BRUSHES ADAPTED TO AUTOMOBILE WORK.

A good share of the brushes used in carriage painting are ill adapted to the far stretches of the horseless vehicle. The round and oval bristle lead and filler brushes suited to the horse drawn carriage need to be increased in size by fully one half. The camel's-hair 2-inch flat brush used upon the brougham and landau should be increased at least 2½ inches, and for the largest touring cars the 3 inch brush is none too large as it gives the painter plenty of time to work over the largest surface and brush out the color properly. A ¾-inch or an inch camel's-hair brush makes about the right second brush to whip around the edges of panels. In varnish brushes a 3-inch brush, half elastic bristles of the best stock, with 1-inch bear's hair or badger hair brush for panel edges will do nicely for rubbing varnish work, while the same sizes will do for finishing except that the 3-inch brush should be of full elastic stock. Color varnish and glazing brushes should be in size of like proportions, and preferably of half elastic stock.

The use of smaller brushes necessitates overdue haste in getting the surface coated in, with the detrimental surface results usually accompanying such haste.

This automobile brush equipment should be well taken care of. It is most generally expensive, and bespeaks the very best possible treatment. All lead and filler brushes, excepting, of course, the camel's-hair brushes used for applying lead coats, should, after being well broken into oil pigments, be suspended in water and made to swing clear of the bottom of the keeper. The points of the bristles should always be carefully protected, and not forced to support the weight of the brush. Camel's-hair brushes after working into colors sufficiently to saturate the heel of the brush, and shape up the body of the tool, should likewise be suspended in water, in a tightly closed keeper. In all cases where water is used for such purposes it should be changed at least twice a week.

For varnish brushes there are countless preserving liquids, but the most uniformly reliable one is varnish, minus driers. There is then no element foreign to your work to be reckoned with.

STEAM TO SUBSTITUTE PETROL OMNIBUSES.

The London Times of recent date contains the following in relation to the substitution of steam for other agencies in the propulsion of omnibuses:

It is stated that the London General Omnibus Company has in contemplation the conversion of a considerable portion of its fleet of petrol motor omnibuses to the Clarkson system of steam traction, a step dictated by the satisfactory working of the Chelmsford omnibuses which the premier London company has already in service. In these chasis the newly designed generator is of the water-tube type. The boiler consists of a central steel shell forged out of a solid ingot in a 1,000-ton press, this shell being machined inside and out and fitted on its outside with generator tubes in the form of a horseshoe, the top of the shell being inclosed in a removable cover. The whole arrangement of shell and tubes is placed within a casing. The control of the paraffin burner is achieved automatically, as is also the case with the feed water, the driver being left free for the management of the car in traffic. The first conversion of such a chassis to the steam system has now been carried out, and a correspondent who has had an opportunity of taking part in a trial run, can testify to the smooth and satisfactory running of the vehicle. A considerable reduction in weight of the engine has been obtained, and a feature, from the point of view of public service, is the comparative silence in working which has been obtained. It is claimed that under traffic conditions in London the steam omnibus of this type will work at a cost of $2.05 per mile, an appreciable economy in fuel consumption having been achieved on tests extending over many hundreds of miles.

GERMAN AUTOMOBILE INDUSTRY.

According to the following German official statistics contrasting the years 1901 and 1906, Consul William Thomas Fee, of Bremen, says that the automobile industry in the Empire shows a remarkable increase.

In 1901 there existed in Germany 12 automobile factories employing 1,589 persons, while in 1906 this number had increased to 34 factories with 10,347 employees. In 1901 $431,873 in wages

Digitized by Google

were paid by the factories, or $272 per workman, while in 1906 $3,171,012 were paid for wages, or $307 per workman. The total value of production shows nearly a tenfold increase in the five years. It amounted in 1901 to about $1,340,000, and in 1906 to $12,200,000. The following sums were expended in manufacturing automobiles:

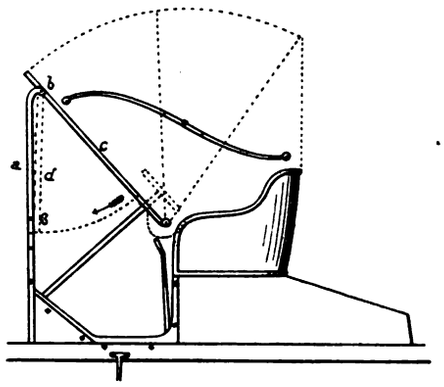
	1901	1906
Wages to laborer (skilled and unskilled)....	$431,873	$3,171,012
Salaries to officers and clerks.....	101,545	622,693
Articles used in running factories, such as coal, etc.....	34,442	381,959
Articles used in manufacturing automobiles.	629,126	6,236,226

SUGGESTIONS FROM ABROAD.

The appended communication, with diagrams, recently came to hand. The writer very kindly presents to The Hub readers two novel devices which recently came under his observation in his far-off country. The arrangements are good and worth copying. The letter is as follows:

Editor of The Hub:—

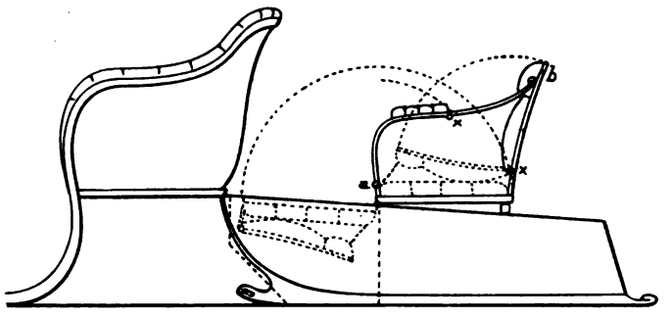
I receive each month a copy of The Hub, and I cannot sufficiently express my appreciation of its worth. In thanking you I desire to say that I am ever ready to give you a helping



hand, by sending you, from time to time, the most practical news and novelties of the trade in our country. I send you herewith some drawings with descriptions of novelties in automobile body construction.

The first is an automobile runabout body with an ordinary victoria or mylord top fitted with a transformable storm glass shell. The great value of this window consists in the fact that it is ready at all times—in summer months as a wind shield when the top is folded, and in the cold season the combination provides a good closed vehicle, which is most practical for doctors, architects, undertakers, etc.

The essential parts consist in, first, the front bow, c, of the top, in which a fold is made for the frame of the window and made



of wood; second, the window frame adjusted in the bow and is suspended at b; third, two bars, a, are fixed on the dash. When the top is folded the window can be fixed below on the bars with hooks or bolts, and providing the best wind screen. In the winter time the window is closed with the same hooks, or bolts to a wooden bar, on which an apron is fixed, presenting a good closed car with all levers and the steering wheel inside the apron. This top with window has been used in my father's works on a certain car, and has given the owner entire satisfaction.

The second novelty represents a folding seat, a veritable armchair for automobile runabouts, the most practical and simplest made. When not in use this seat is invisible and requires but little space. It is ready for use in less than a minute's time. The construction is shown in the accompanying illustration. The cover of the rear platform is upholstered on inside, and when open forms the cushion. The back is fixed to the seatboard, but folds down on the cushion when not in use. The arm holders are made below as hooks at A, and are hooked in above; they are bound with solid bolts. This system of folding seat gives a good appearance to the automobile, especially strong machines.

Mr. Editor, you are welcome to the drawings and description, and I trust you will receive same. In the meantime I am ever your friend and subscriber.

Very truly yours,

PIERRE WAGNER,
Coach Painter.

Diekirch, G. D. Luxembourg, Europe.

DECORATIONS FOR THE GARDEN SHOW.

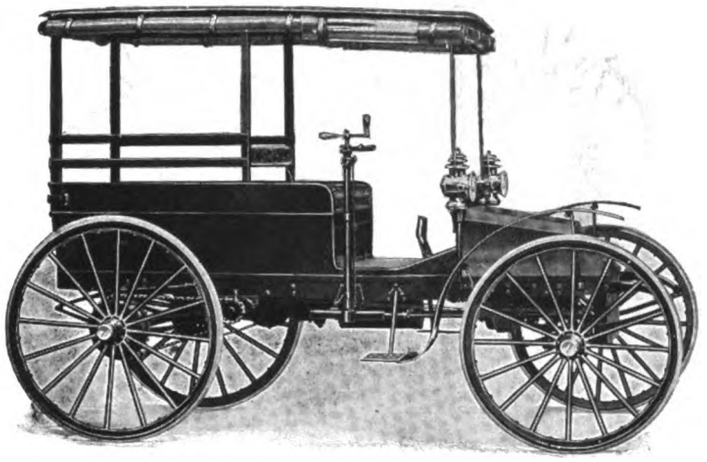
Since the big automobile shows began to be held in Madison Square Garden, each successive year has witnessed a marked improvement in the decorative scheme used for the occasion until, during the last four years, the interior of the famous old exposition hall has been made notably more magnificent for the exhibit of motor cars than for any other event in the place. A praiseworthy fact in connection with this dressing of the place is that the progress has been from the merely elaborate and ornate toward the chaste and elegant. At the forthcoming show, January 16-23, under the auspices of the Association of Licensed Automobile Manufacturers, the step in this direction will be more marked than ever before. There will be magnificence and elaborateness, but there will be less profusion, more simplicity and more richness in the general scheme. There will be a gratifying lack of the plaster statues seen in former years, and a tone of more solidity will prevail, as being more becoming to the standard makes of the oldest automobile makers that always comprise the Garden show. One of the few really showy pieces of decoration this season will be a sort of Garden fountain near the Madison avenue entrance. This is in the form of a low abutment of gray stone, curving about the first exhibition spaces facing the entrance. It will have a trough-like basin, into which water from griffin mouths will spray upon the electrically iridescent pool beneath and this falling water, too, will be electrically radiant. In the pool of the curving basin there will be goldfish and pond lilies, some of the lilies natural and some artificial. From the artistical flowers electric lights will radiate, while a concealed row of lights under the coping of the trough illuminates the falling spray.

PROSPECTS OF GOOD BUSINESS.

C. F. Jensen, president of the National Retail Automobile Dealers' Association, makes the following interesting statement: "Since leaving my headquarters in Joliet, Ill., I have seen a great many agents and they are all signing up for a great many more cars next year than ever before. It is remarkable how many agents in the small towns are contracting for 50 to 150 cars and declaring there is no question of their ability to dispose of them. The farmers in Kansas, Iowa, Nebraska and Minnesota are in fine financial shape and ready to buy cars, although the moderate priced machines will be most in demand among them. The cars selling for $1,200 or less are taking very well, while there is a steady demand for the high wheel buggy type. Our Dealers' Association is growing rapidly; the agents for cars appreciating the fact that many advantages can be secured by co-operation. There are many abuses in the trade which the association will try to remedy, and in doing so we believe the manufacturer will be benefitted as well as the dealer. We are trying to help the agents to secure the agencies for cars in which there is a good profit and a fair working basis." Mr. Jensen arranged for the automobile show at Grand Central Palace to be the headquarters for the Dealers' Association in New York and for each member of the association to have the courtesies of the exhibition.

Digitized by Google

Illustrated Automobile Section, December, 1908



Twenty Horse Power Reliable Dayton Delivery Wagon.
Built by Reliable Dayton Motor Car Co., Chicago, Ill.



Ten Horse Power Chase Business Runabout.
Built by Chase Motor Truck Co., Syracuse, N. Y.

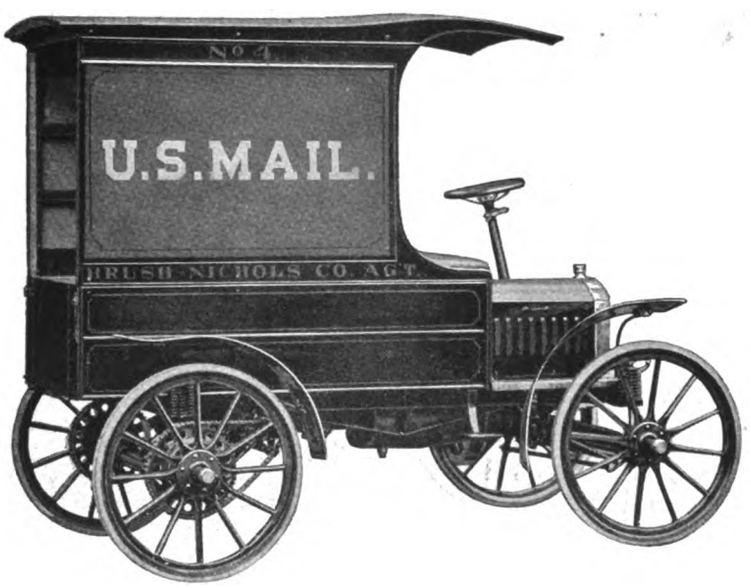
Motor Vehicles at Recent New York Carriage Exposition

Digitized by Google



Schacht Sixteen Horse Power Motor Buggy.

Built by The Schacht Manufacturing Co., Cincinnati, O.

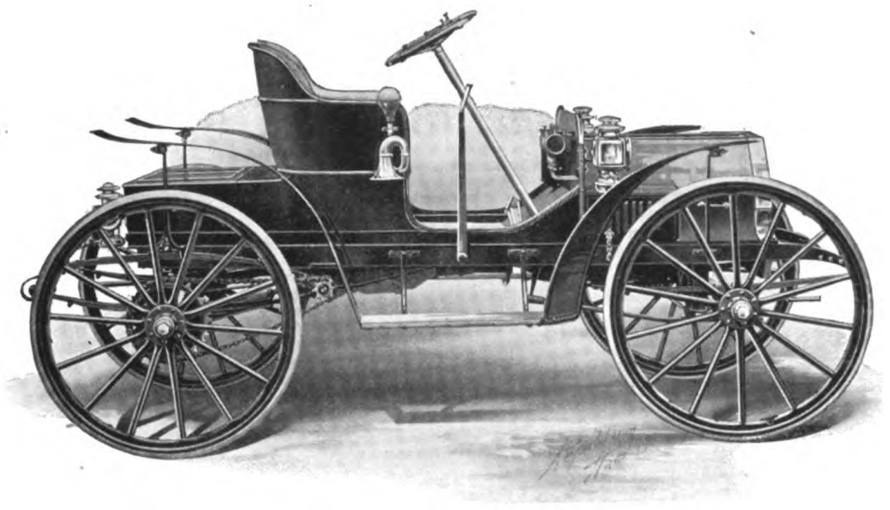


Brush Business Runabout.

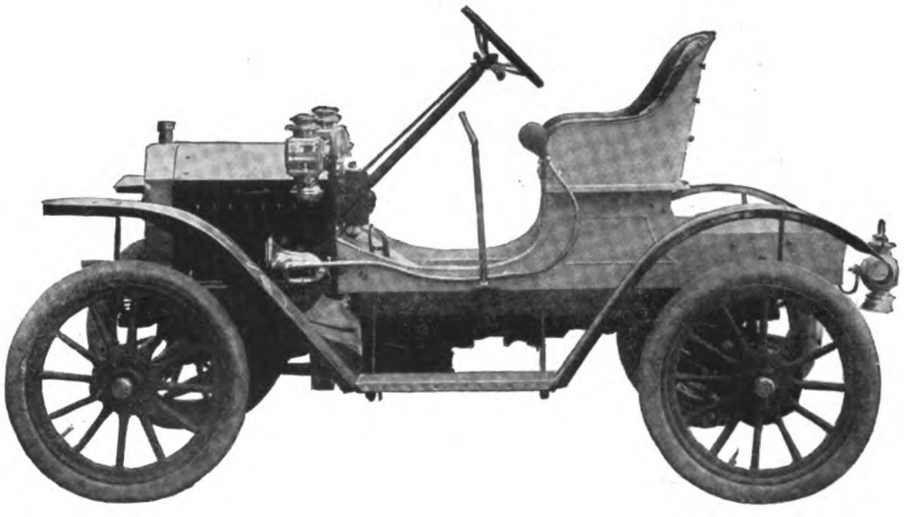
Built by The Brush Runabout Co., Detroit, Mich.

Motor Vehicles at Recent New York Carriage Exposition

Digitized by Google



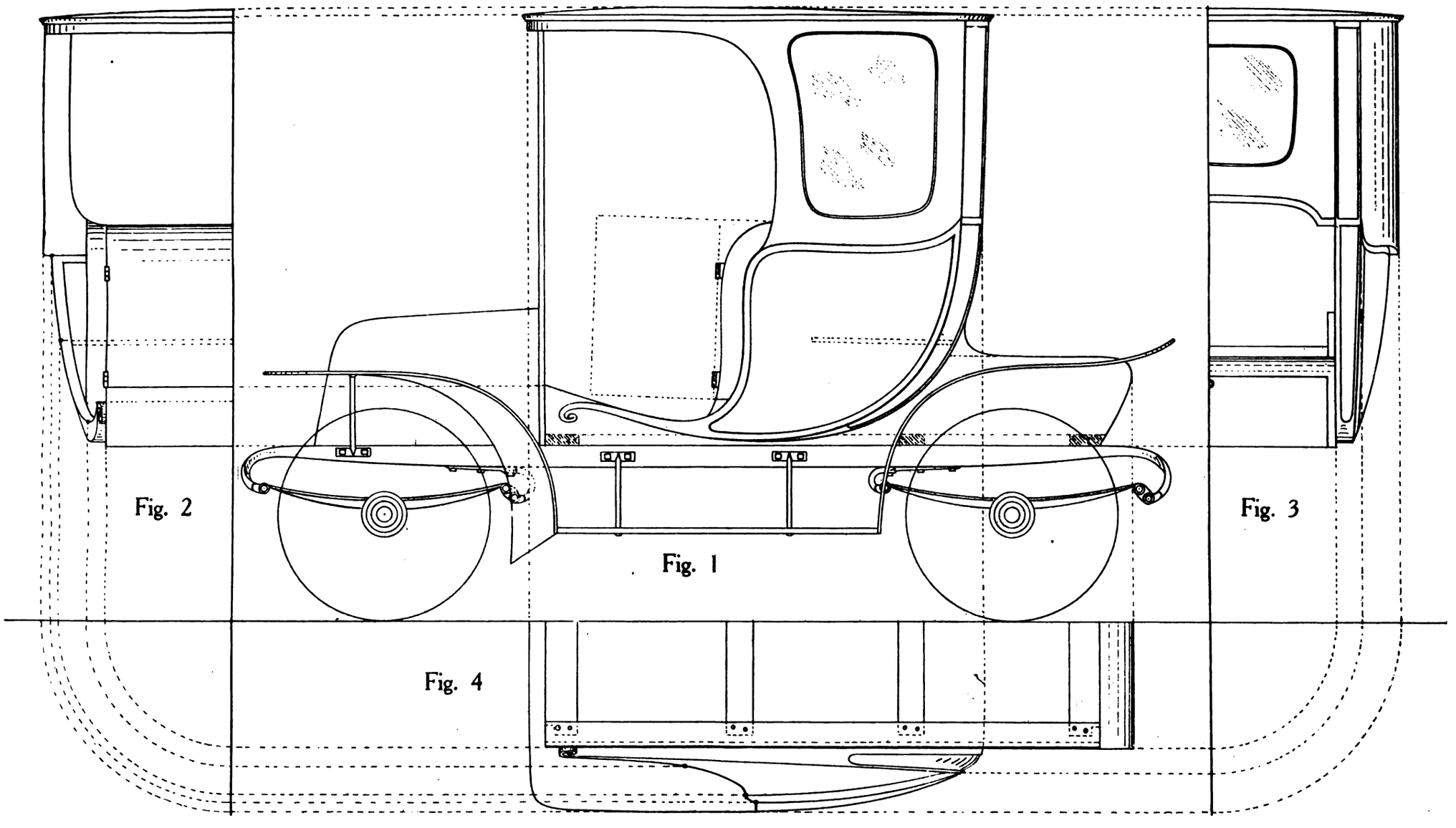
Paterson Fourteen Horse Power Motor Car.
Built by W. A. Paterson Co., Flint, Mich.



Brush Pleasure Runabout.
Built by The Brush Runabout Co., Detroit, Mich.

Motor Vehicles at Recent New York Carriage Exposition

Digitized by Google



Working Draft of Cabriolet-Hansom Motor Body.

Described on opposite page.

Scale, ¾ inch to the foot.

Digitized by Google

Body Construction and Finish

DESCRIPTION OF WORKING DRAFT OF CABRIOLET-HANSOM MOTOR BODY.

Drawing on opposite page.

It is acknowledged as an axiom in philosophy that he who makes two blades of grass grow where one grew before is a benefactor to his kind.

Hansom, the inventor of the hansom cab, and who by the way was an architect, can with truth be classed as one of those who have left their footprints in the sands of time. For while his design holds the premier position as a cab plying for hire, its lines are like other carriage designs, being drafted into requisition to supply the demands of the motor craving for quick and graceful designs in specialized cars catering to a specific purpose. To keep motor bodies in line with carriage building proper, it is almost impossible to eliminate the original design in their fashioning.

The design given in our working draft is a combination of the cabriolet and hansom cab. The bottom quarters are cabriolet shaped, while the top quarters and projecting canopy follow the lines of a hansom cab. The canopy is projected well forward to the line of the back of the bonnet. The knee flap doors are made to open outwards, as in a hansom cab, and extend forward of the front pillar.

The head quarter is built on the elbow line 1¼ in. in projection from the elbow moulding at the front of the pillar, and tapering to the elbow joint on the back line of the body. This projection lifts the heaviness of the top quarter away from the body, while it allows the full moulding line of the bottom quarter to show itself with more telling effect than if the quarters were both in one surface line. The rear projection of body and the rocker at bracket are in one solid side, and screwed to the inside of the bottom side of the body quarter. There are of course chassis bottom sides which are half lapped into the solid sides, and cross-bar framed in.

The top quarters are of light ash framing, and the back pillar is a continuation of the hind elbow pillar and bottom side, same as in a brougham body. Light pieces are half lapped to the back pillar and the elbow, and the front light pillar is half-lapped to the elbow and cant rail, the side light being formed on the inner edges of these framings. The D—front—can either be half-lap framed to the cant rail, or dovetailed to the end of it, and strengthened with light flat edge plate on the inside, which should go well over the joint on each side as a matter of strength. The framing of the top quarter is panelled over and mitre-jointed to the back line moulding, thus making a smart and clean job of the head and quarter together. The roof boards and the side and back panels are, of course, mitred as well at the corner pillar joint.

Fig. 1 shows the elevation complete. The lines of the body are of a firm and pronounced curvature, the front pillar line finishing with a return scroll at the bracket. The projection behind is fitted with a door, so that light luggage can be stored in it. The corner pillar of the body is rounded and panel boxed, and the mouldings worked up in the solid. A wide and thick piece of ash is necessary for this framing. The effect is very taking in bringing out the back lines of the body, while it provides a wider seat room, which in its turn gives plenty of knee space from the edge of the seat to the door flaps.

The body is made as a cabriolet with a framed and panelled head fitted to it. So that a body maker who is skilled in this class of work in horse-drawn carriage bodies will not experience any great difficulty in building such a motor body, for the only difficulty to be feared is resource, and not expertness, with the tools.

Fig. 2 shows the half front view of the body. The front end of pillar is fitted with a separate piece, and the moulding worked up, as shown. The knee rocker pieces are fixed to the inside of the pillar piece and panelled over the rockers. The door flaps are hinged. The doors are made of 1¼ in. ash framing, and panelled over. They need not be cased up, as they are nicely squab finished in the trimming, which dispenses with casing boards.

The D front rail can be obtained direct from the timber benders, or it may be cut out of the solid plank to pattern, and half-lapped together in the center and to the cant rails on the side, and strengthened with light edge plate. The front of the body is made without lights, because the wind shield in front of the body supplies the protection that is needed, though of course a light can be fitted to the front of the body and made to slide up into the roof or to hinge up and held in position out of the way with springs or straps.

Fig. 3 shows the half back view, from which the shape of the panelling and the line of the boot side, as fixed to the bottom side. The working-up of the corner pillar and the projection of the top quarter over the front pillar, is clearly shown in this section. The rear projection of body is made with rounding corner and door to let down behind. A large back light is provided, which is a necessary element.

Fig. 4 shows the half plan of the body, in which the shape of the corner pillar is more clearly shown as a working particular than in the elevation and half back. The contour line of the outside of the bottom side is a very faint curve. The side itself is like a slice cut from the side of an inverted cone. This kind of body is much more difficult to make than a brougham, though it does not seem so. The framing is pitched at curved angles, which must be developed to get their correct fall and height, so that the lines follow the outline of the design faithfully in the finished body.

The points of projection from Fig. 2 to Fig. 4 are pricked off from one section to the other, while the framing of the platform to bolt to the chassis is clearly explained. The body is well balanced upon the chassis, the span of the wheels being centered to preserve a steady and well balanced movement in traveling at a high speed, which is a most essential point in the suspension of motors, but which, until the last two or three years, was a most conspicuous defect in almost every build of car.

The sizes of the body are: Full length on bottom, 6 ft. 1 in.; from dash to pillar, 26 in.; length of body on elbow to front of pillar, on a straight line, 27½ in.; round on back from corner of body, 3 in.; depth of door rocker on front pillar, 3 in.; full depth of bottom quarter over top of front pillar, 26 in. From top of quarter moulding to top of roof on cant-rail, 30 in.; rise on roof, 1 in.; depth of leg room on seat, 14 in.; from seat to roof slat, 42 in.; side light, 24 in. by 17½ in.; width of body on back at elbow line, 39½ in.; width over front pillars, 47 in.; full width over head, 49½ in.; width on chassis, 33 in.; size of back light, 22 in. by 15½ in.; width of seat, 19 in.; width of body over pillars on seat line, 45 in.

AUTOMOBILE SPRING SUSPENSION.

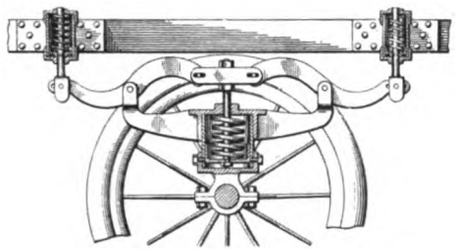
A spring for automobiles and other vehicles, which seems to be practical, and which will probably take the place of shock absorbers, was recently patented by William R. Rantz, of Greenville, Ohio.

It will be noted that a spring device constructed as shown by

Digitized by Google

accompanying diagram will give the yielding action of a spring board, all jars being taken up by the springs and the strain and stress upon said springs being to a great extent removed by the yielding or rocking motion of the levers, there being no rigid connections between any portion of the body of the vehicle and the axles.

One of the claims is in a device of the kind described, three cylinders, one cylinder being carried by a vehicle axle and two



by a vehicle body, bracket arms supported from the vehicle axle, and levers pivoted upon said arms, spring pressed piston rods in said cylinders, and means loosely connecting the inner ends of said levers to the piston rod of the cylinder supported by the axle, the outer ends of said levers being pivotally connected respectively to the other piston rods.

TRIMMING A CABRIOLET-HANSOM MOTOR BODY.

Illustrations accompanying.

The trimming of a body of this character should be of a contrasting but stylish design. As has so often been pointed out in the pages of this publication, the motor car has given an upheaval to change of form and style throughout the carriage building industry in every country where its manufacture is of

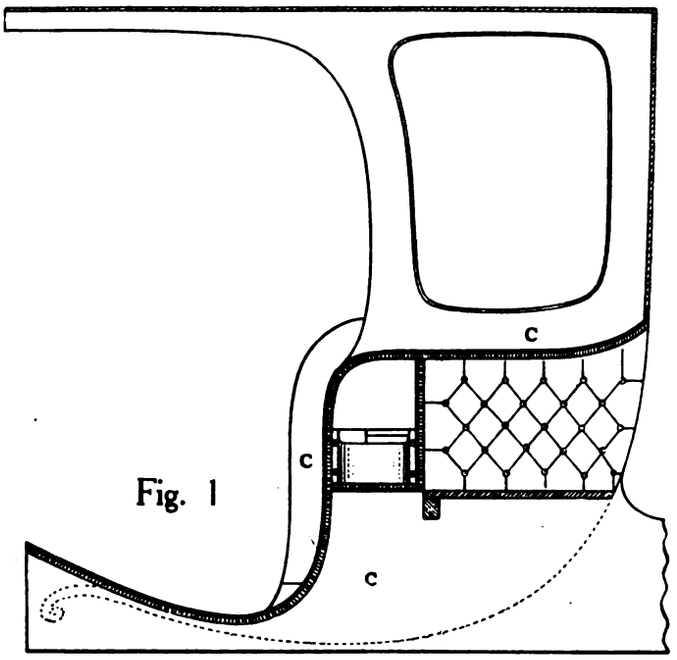


Fig. 1

any importance. It has had the effect of engrafting a richer flavor in the upholstering of road and motor carriages, and in evolving styles dressed in a wealth of art peculiarly pleasing to the various designs of motors and their adaptability.

The cabriolet-hansom is an exclusively designed single motor carriage, and can be used in a professional or private capacity without its losing any of its exclusive strength in either following.

The design of upholstery which is here shown is of a contrasting yet harmonious character. The side quarter and back squabbing is made in column and plain diamonds, while the top quarters and top back are plain surface cloth.

The most taking color is for the back and quarter squabbing to be of dull grained drab morocco leather, and the top quarters and back top back to be of drab colored cloth to match.

This style of material lends a very rich appearance to the interior trimming; morocco is of course the richest material,

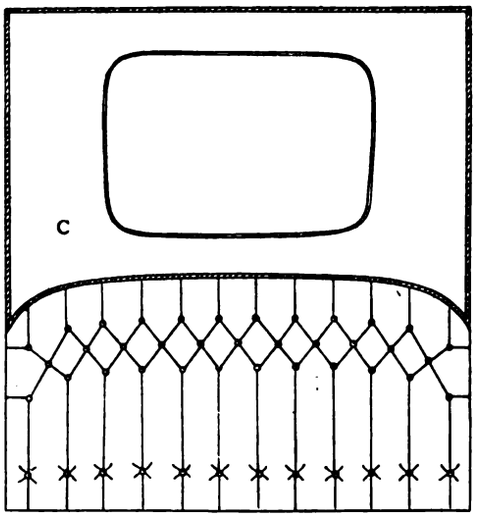


Fig. 2

though a drab cloth of very fine texture is now made specially for motor trimming, and looks very smart. An imitation morocco leather is also on the market for this work. It is made in broad widths, so that the back squab of a motor body can be cut in one piece, and no joint shown, which is of great value in trimming King of Belgium bodies and those of similar design.

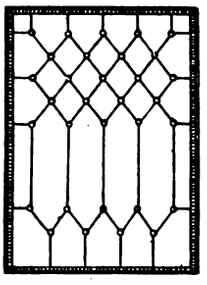


Fig. 3

The quarter in Fig. 1 is worked up in small diamonds; the front of the squab is made plain and stuffed to a rounding fulness, and a card pocket worked up as shown. These little receptacles are most convenient and necessary in a motor carriage. The spaces marked C, which are the bottom of the quar-

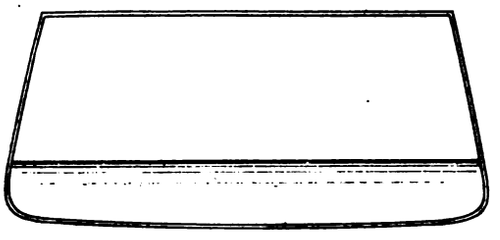


Fig. 4

ter, the knee flap rocker and the head quarter are finished in plain cloth.

The back squab is worked in columns and diamonds, while the top C is finished in plain surface cloth.

The interior of the door, shown in Fig. 3, is done in small diamonds and columns in center, with half column to match at

Digitized by Google

bottom. The design makes a smart finish to the door upholstery.

The roof can be covered in plain cloth, as is usually done in broughams and private hansoms, or it can be finished in casing boards and varnished, which is a practice adopted by some large firms. But no alternative decoration looks so smart, nor possesses the artistic finish that cloth, morocco and lace combined offer, nor in any way approaches them either in motor or horse-drawn carriage work.

Fig. 4 shows the inside seat. It is made in plain surface, but with coil springs for the webbing and hair stuffing to rest upon,

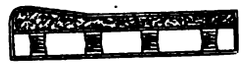


Fig. 5

as shown in section by Fig. 5. This method of making motor carriage seats is general now, and a good advance on the all-hair method of stuffing, as is done in horse-drawn carriages.

But of course the two vehicles are very different as travelers, for where long and quick journeying is performed a more responsive seating and back rest is most necessary to keep the body of the rider in a pleasant motion, which in horse-drawn carriages is brought about by good and pliant springs to the underworks and correct suspension, as well as in faultless stuffing in the cushions and squabbing.

So that what applies with such effectiveness to the latter vehicle is far short of what is found to be imperatively necessary in the upholstering of a motor car.

MOTOR BODY MADE OF TWELVE CASTINGS.

Illustrated on this page.

The accompanying illustration of body is made entirely of cast aluminum, and cast by the Nordyke & Marmon Co., of Indianapolis, Ind., for their 1909 seven-passenger touring car. The hinges are of bronze, as is also the door sills. The top irons are bolted to the aluminum seats, lugs being cast on the seats inside to help support the irons. The bolt heads on the outside are countersunk and flush with the casting.

The body consists of the dash, which is a one-piece casting; two short panels bolted to the dash; the two side panels, including the door jam; the front seat casting; the two tonneau doors; the two base castings for the tonneau and the door in the rear of same, and the tonneau seat are all separate castings. The body is thus made up of twelve castings. Forged irons are attached inside for supporting revolving extra seats.

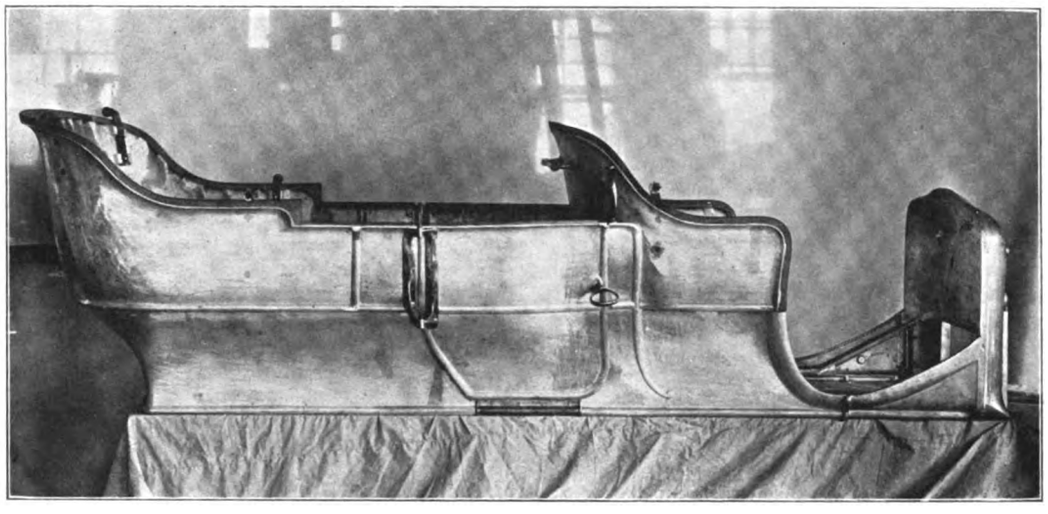
This construction has been followed by above mentioned house in all of their cars since it was first put on the market in 1905 and they have found it superior to anything else tried, though somewhat more expensive.

IMPORTANCE OF GLAZING COLORS IN AUTOMOBILE PAINTING.

The automobile is particularly a vehicle suited to the display of glazing colors such as blues, reds and the various lakes. It has length, and breadth, and contour, upon all of which these pigments thrive and reflect great brilliancy.

It has been said that upon the automobile these colors display an artificial brilliancy for the reason that the surface swings well below the average line of vision and the lustre of the pigments become considerably magnified thereby. However, be that as it may, the glaze pigments, one and all, show an intense tone and lustre on the automobile surface than upon most carriage and wagon surfaces.

One of the popular blue glazing pigments is ultramarine blue furnished in three shades. Bring the surface up as clean and smooth as possible, and then lay on a coat of refined lamp black.



Automobile Body Made of Twelve Castings.
Described on this page.

Procure the lamp black ground in japan and wet it in turpentine, adding to a pint of the thinned black one teaspoonful of raw linseed oil. Lay the color on with a camel's-hair brush, and aim to have it flat out nice and clean. Next beat up some of the ultramarine blue in turpentine, add to it a few drops, say a dozen, of raw linseed oil, and apply a coat of this flat, using, as in the previous case, a camel's-hair brush.

Let each of the above coats dry over night before recoating. Now take some of the ultramarine blue, and using it in proportion of ¾ oz. of blue to each pint of elastic rubbing varnish, whip it very thoroughly into the varnish and with a half elastic bristle varnish brush flow freely over the surface. In due time kill the gloss on this coat by rubbing slightly with a soft wool sponge dipped into water and No. 00 pulverized pumice stone. Wash and clean up thoroughly and apply a second coat of this blue glaze mixed and conditioned exactly as was the first coat. Reduce this second coat in the manner provided for the reduction of the first coat, and then flow on a rich, generous coat of pale rubbing varnish into which cast a dash of the blue in order to preserve the true tone of the ultramarine. Subsequent coats of rubbing varnish should contain enough of the blue to counteract the discoloring property of the varnish.

In the matter of handling lakes such as were mentioned on page 127, of July issue, we may say that methods similar to those defined above are entitled to be respected. All glaze col-

Digitized by Google

ors have nothing in themselves to assist in making the surface of pigment more solid and opaque in color. The solidity of the color must be provided for through the medium of the preparation or ground coats. These of course must not only be brought up full and strong in color properties, but they must carry a flush of lustre and depth of tone which only the glazing colors themselves can intensify and enrich.

Some surface formations require, for the purpose of color effects, brighter glazing pigments than others, side surfaces being, for example, of the concave pattern. Deeper toned pigments appear to better advantages upon convex surfaces. In like fashion the concave surface requires a greater depth of surfacing pigment with which to get proper finishing bottom, whereas minimum processes suffice upon the convex surface. All these details must receive consideration when the glazing colors are being handled if the importance of such colors are to be given due weight.

PUTTYING THE AUTOMOBILE.

Practically the same kind of putty is suited to the automobile surface as is used upon the carriage. If there is any perceptible variation it is in favor, when strictly high class work is under discussion, of the putty that dries slightly slower than the ordinary quick carriage putty. Some automobile painters appear to favor for some of the big touring cars and limousines a putty mixed of 1-3 dry white lead, 1-3 keg lead, 1-3 refined whiting beaten to proper consistency in 5 parts pale drying japan and 6 parts rubbing varnish. This putty carries a little more elasticity than the putty made of 3-4 dry white lead and 1-4 whiting, stirred in equal parts of japan and rubbing varnish, and where time is not strictly a factor, and where the surface is of the larger type, and is to be subject, as such surfaces invariably are, to extremes of strains and oscillation, it is to be recommended.

Another putty, denser of body and less porous than the above, but doubtless quite as elastic, and therefore quite as well recommended, is made of keg lead 4 parts, dry white lead 1 part, mixed in equal parts of elastic rubbing varnish and gold size japan. In puttying these large surfaces upon which defects stand forth with exceeding distinctness it is all important that nothing be overlooked. Whefe a cavity is passed over through an oversight or otherwise, during the regular process of puttying, and resort must be had to a later coat of pigment upon which to putty the overlooked defect, there is the danger, ever present, of the putty thus applied not being surfaced down sufficiently to lose its identity upon the surface when finished. Emphatically is this true when the defect is puttied after the roughstuff is rubbed down. The only safe remedy in such a case is to allow the putty to get thoroughly hard, holding up all work upon the body meanwhile, and then to rub with water and brick or lump pumice stone until the putty is precisely smooth and level with the surface as a whole. If the putty is simply sandpapered down ten chances to one it will be reduced only partially, at best.

Moreover, it is impossible to establish anything like uniformity in surfacing when holes and surface defects are overlooked at the line of the regular puttying. Some workmen form the habit of going over the surface without any system. This hit or miss method is responsible for the existing defects discovered later on when it is fairly impossible to effectually remedy them.

The accomplishment of never mixing a surface defect when puttying is all important in automobile work where all surfaces may be said to be conspicuous.

Then, too, there is the practice of drawing the knife loaded with putty straight across the hole or fracture, either vertically or horizontally, thus making a smear two or three times the necessary size. This is especially bad practice upon large surfaces where the unbroken spaces fairly illuminate defects whether of too much or too little putty. This is true even when the surface is to be rubbed out of roughstuff. The only safe and reasonable practice, founded upon trade experience dating back to the dawn of the painting era, consists of using in a quantity consistent with the actual requirements of each individual surface defect. When the cavity or fracture is filled flush with the surrounding surface, with no curling or uplift of the pigment, all the requirements are fully met. Anything more may be deemed an excess, and excesses are dangerous. Good puttying is in the highest degree essential to excellence in automobile painting, and it deserves to be done after the approved methods of trade craft.

DECORATIVE FEATURES OF PALACE SHOW.

A representative of the S. R. Ball Company, which has the decorating contract for the A. M. C. A. show which opens in the Grand Central Palace, New York City, on New Year's Eve, has returned from a trip abroad, where he has been looking up ideas to be embodied in the decorative scheme of the show. One of the artistic features will be 12 full-size statues of a woman holding above her head an automobile wheel with flying wings. These figures of white ivory composition draped in flowing robes will look down upon the main floor from the lower balcony. Other statues of much larger dimensions will be placed in the lobby, main stairways, and throughout the main court. The plans, if completed as mapped out, will mark a distinct advance, from the decorative standpoint, over anything that has previously been attempted in the automobile show line.

HOW SUCCESSFUL MEN WORK.

Have you ever watched a busy man as he waded through his work?

He didn't waste much time in looking after the non-essentials.

He didn't fool around and whine about the immense amount of work he had to do.

He didn't call his wife up on the telephone and tell her he didn't "know how he was ever going to get through with his day's work."

He didn't stop to jaw the boys, growl at the girls or scold the men.

He sat right down at his desk, or he lifted his hammer or plane, and just pounded in, working with all his might and main, and presently the thing was done.—Dry Goods.

Wants

HELP WANTED.

Wanted—Experienced machine foreman for large automobile body concern. State experience and age. Address Box No. 16, care The Hub, 24 Murray street, New York City.

Wanted—First-class traveling man with experience as buggy salesman in Southern territory, to represent a Cincinnati carriage factory. Address "Cincinnati Carriage Factory," care care The Hub, 24 Murray street, New York City.

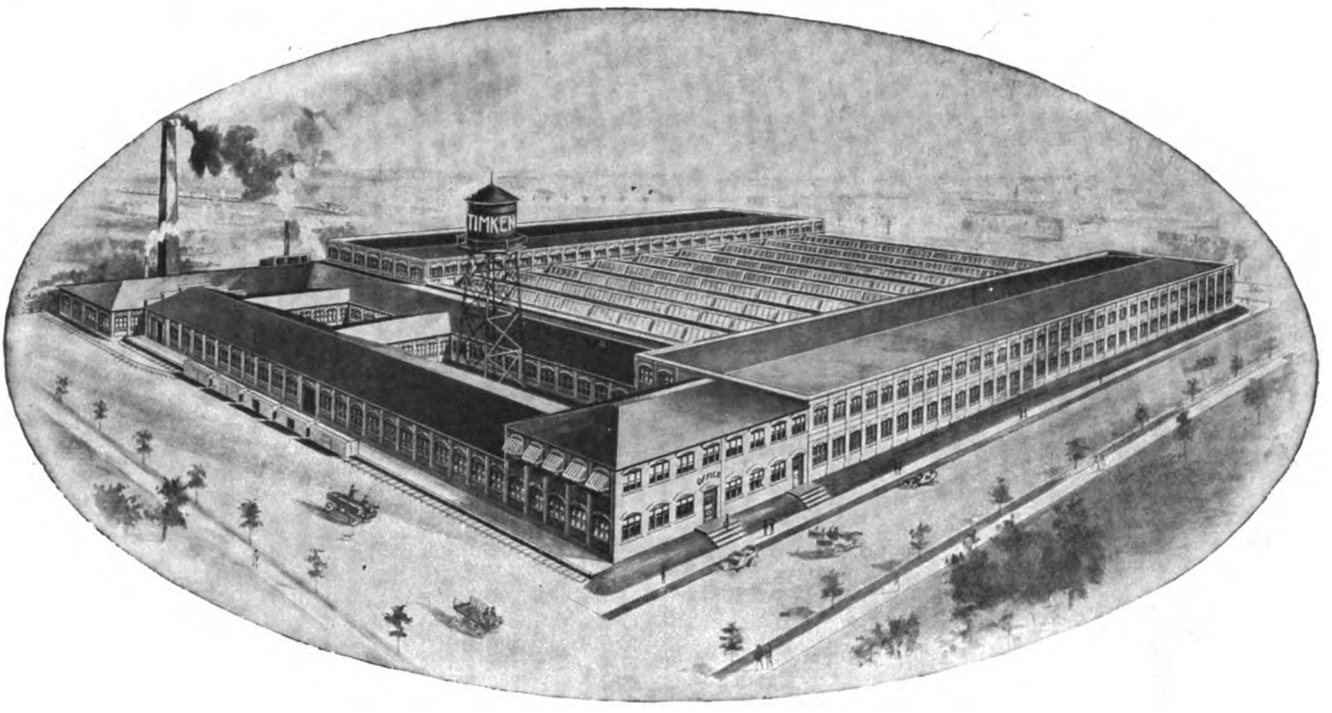
SITUATION WANTED.

Wanted—Position as foreman trimmer, or steady position in high grade carriage and automobile works, by first-class man. Can furnish good references. Address "S. G.,' care The Hub, 24 Murray street, New York City.

FOR SALE.

For Sale—Old established carriage and repair shops, located in center of Eastern city, with population of 200,000. Doing high grade work on best carriages in town. Will sell cheap, as present owner is obliged to change climate. Full particulars by applying to "H. A. S.," care The Hub, 24 Murray street, New York, N. Y.

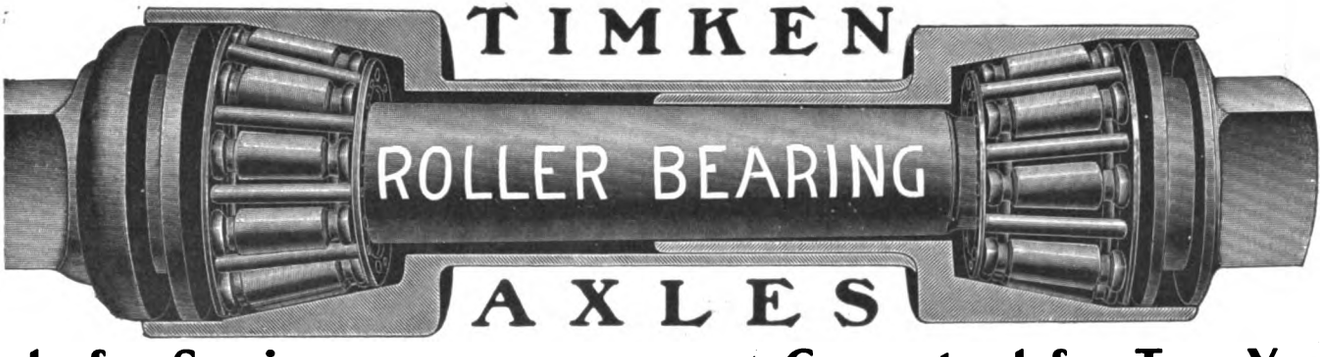
Digitized by Google



Above Illustration of our Factory Gives an Idea of our Facilities.

We produce more anti-friction axles for the carriage and wagon trade than all competition combined.

The reason is because of acknowledged superior merits, correct principle and best material, insuring durability as well as giving greatest possible reduction of draft.



Made for Service **Guaranteed for Two Years**

Indispensable to Motor Buggy Builders

Write for Catalog and Prices.

The Timken Roller Bearing Axle Co.

CANTON, OHIO

10 E. 31st STREET, NEW YORK **429 WABASH AVENUE, CHICAGO**

Digitized by Google



A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

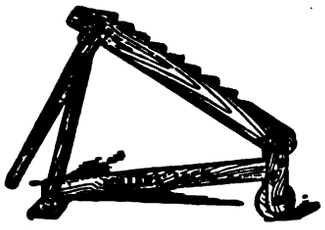
Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.



Made in four sizes, Nos. ½, 1, 2, and 3.

JACKS FOR BUGGIES AND WAGONS

Miller Patent Wagon Jack Made by

J. V. HANKINSON,

Successor to THOS. MILLER,

FRANKLIN, OHIO.

Write for particulars and prices.

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.

745 THIRD AVE., BROOKLYN, N. Y.

INDEX TO ADVERTISEMENTS.

American Roller Bearing Fifth Wheel Co..... 12
American Wood Block Co..... 22
Auxiliary Spring and Ventilating Button Co.....2d cover

Barnes & Co., W. F. & John..... 12
Bentel & Margedant Co..... 6
Bertram & Lamoreaux..... 20
Bradley & Son, C. C..... 21

Central Bureau of Engraving..... 14
Cortland Forging Co..... 18
Columbus Bolt Works.....4th cover
Consolidated Rubber Tire Co..... 2
Cooper Co., J. A. & D. P..... 15
Crane & MacMahon.....2d cover

Dalzell Axle Co..... 22
Defiance Machine Works..... 15
Devoe, F. W., & Raynolds Co., C. T.....3d cover

Eccles Co., Richard..... 16
English & Mersick Co., The..... 5

Fitch Gear Co..... 21
Frantz Body Mfg. Co..... 17
Fairfield Rubber Co..... 15

Gerhab, Jacob 15
Gifford & Son, John A..... 13
G.-L. Economizer Co..... 4
Goodrich Co., B. F., The..... 3
Goodyear Tire and Rubber Co..... 5

Halsey & Smith..... 19
Hankinson, J. V..... 12
Harland & Son, Wm..... 1
Hoopes Bro. & Darlington, Inc.....2d cover
Howell & Co., T. P..... —

Indianapolis Bolster Spring Co..... 20

Jones & Co., Phineas..... 13

Keystone Forging Co.....13
Kokomo Rubber Co.....4th cover
Koller & Co., J. B.....16

Landsman Motor Co..... 14

Masury & Son, John W..... 2
McKinnon Dash Co..... 4th cover
Miller Bros. 16

National Spring and Wire Co..... 20
Nobles & Hoare.....3d cover

Pomeroy & Fischer.....3d cover
Porter, H. K..... 20

Russell, Burdsall & Ward Bolt and Nut Co..... 22

Schubert Bros. Gear Co..... 20
Schubert Gear Co., August..... 16
Sheldon Axle Co..... 21
Shortsville Wheel Co..... 18
Smith & Co., Edw..... 5
Sparks-Withington Co. 17
Spring Perch Co..... 13
Standard Ball Axle Co..... 22
Standard Oil Cloth Co..... 4
Standard Varnish Works..... 3
Stein Double Cushion Tire Co..... 5
Studebaker Bros. Mfg. Co..... 14

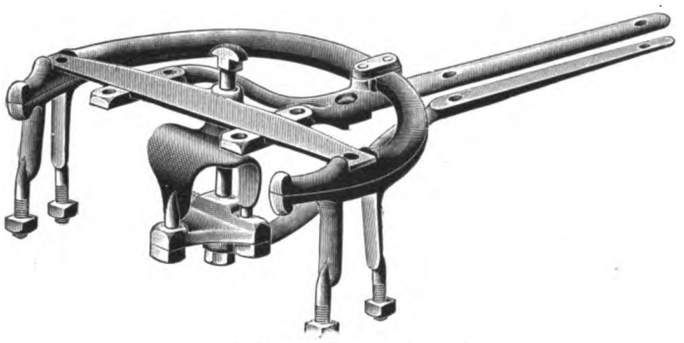
Timken Roller Bearing Axle Co..... 11
Tucker Wood Work Co..... —

Valentine & Company..... 4

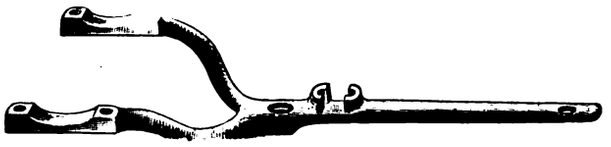
West Tire Setter Co.....3d cover
White, H. F..... 20
Wiesse & Co., Wm..... 20
Wilcox Mfg. Co., D..... 13
Willey Co., C. A..... 6
Woodman, Joel H..... 21

Digitized by Google

FIFTH WHEELS—FORGINGS



1908 Single-Reach Gear Set.



Detachable Fork Perch Connection Used in 1908 Gear Set.

Greatest Line on Earth

WHEN ORDERING GEAR SETS BE SURE TO GET THE GENUINE

Wilcox Rear King-Bolt Gear Sets

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MANUFACTURING CO.

MECHANICSBURG, PENNSYLVANIA

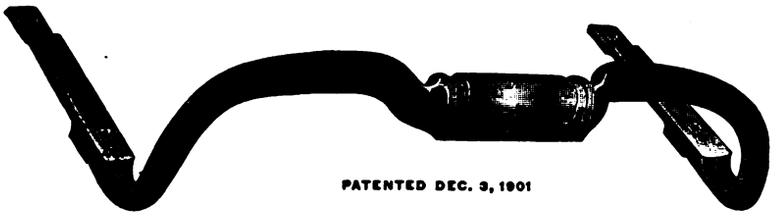
JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

Jones Wheels

BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.



PATENTED DEC. 3, 1901

THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland Pa.

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

Digitized by Google



The best buggies for the money on the market

The "World" Line

THIS splendid line of medium grade work grows in favor with the trade every year. This year it is just a little better than ever before. The cut shown above of our new twin auto-seat buggy with quick shifting device for removing top is a great seller

SEND FOR CATALOG

Studebaker

Brothers Manufacturing Co.
South Bend, Indiana, U. S. A.

Build Your Own Auto

A GASOLINE ENGINE TO FIT ANY BUGGY or WAGON

LANDSMAN MOTOR CO.
908 Hickory St. ST. LOUIS, MO.
Write for Catalogue.

MANUFACTURERS

DESIRING FIRST-CLASS ILLUSTRATIONS OF THEIR PRODUCT, AT REASONABLE PRICES, SHOULD PERMIT US TO SUBMIT AN ESTIMATE.

Central Bureau of Engraving
COMMERCIAL ENGRAVERS
157-159 WILLIAM STREET, NEW YORK

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

Axles, Etc.
Dalzell Axle Co., South Egremont, Mass.
Sheldon Axle Co., Wilkes-Barre, Pa.
Sparks-With ington Co., The, Jackson, Mich.
Standard Ball Bearing Axle Co., Lancaster, Pa.
Timken Roller Bearing Axle Co., Canton, Ohio.

Bodies, Seats, Etc.
Franz Body Mfg. Co., Akron, O.
Woodman, Joel H., Hoboken, New Jersy.

Bodies in the White.
Miller Bros., Amesbury, Mass.
Schubert Bros. Gear Co., Oneida, N. Y.

Bolts and Nuts.
Columbus Bolt Works, Columbus, Ohio.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

Carriage Cloths.
Wiese & Co., Wm., New York City.

Carriage Forgings.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

Carriage Hardware.
Gifford & Son, John A., New York.

Carriage Goods.
Cortland Carriage Goods Co., Cortland, N. Y.
English & Mersick Co., New Haven, Conn.
Fairfield Rubber Co., Fairfield, Conn.
Gifford & Son, John A., New York.

Dashes, Fenders, Rails, Etc.
McKinnon Dash Co., Buffalo, N. Y.

Engraving.
Central Bureau of Engraving, New York City.

Fifth Wheels.
American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

Finished Vehicles.
Studebaker Bros. Mfg. Co., South Bend, Ind.

Hubs.
American Wood Block Co., The, Delphos, Ohio.
Koller & Co., J. B., Mechanicsburg, Pa.

Jacks.
Hankinson, J. V., Franklin, O.

Lamps.
Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

Leather.
Howell & Co., T. P., Newark, N. J.

Machinery and Tools.
Barnes Co., W. F. & John, Rockford, Ill.
Bentel & Margedant Co., Hamilton, Ohio.
Defiance Machine Works, Defiance, Ohio.
G.-L. Economizer Co., The, New York.
Maxwell & Fitch Co., The, Rome, N. Y.
Porter, H. K., Everett, Mass.
West Tire Setter Co., Rochester, N. Y.

Miscellaneous.
Bertram & Lamoreoux, Detroit, Mich.
Jewel Mfg. Co., Chicago, Ill.
Standard Oil Cloth Co., New York.

Rubber Tires.
Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, O.
Goodyear Tire and Rubber Co., Akron, O.
Kokomo Rubber Co., Kokomo, Ind.
Stein Double Cushion Tire Co., Akron, O.

Shaft Couplings and Anti-Rattlers.
Bradley & Son, C. C., Syracuse, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Metal Stamping Co., New York City.
Speedy Shaft Coupler Co., Langworthy, Iowa.

Springs and Gears.
Auxiliary Spring and Ventilating Button Co., Detroit, Mich.
Cooper, J. A. & D. P., Struthers, O.
Fitch Gear Co., Rome, N. Y.
Indianapolis Bolster Spring Co., Indianapolis, Ind.
National Spring and Wire Co., Albion, Mich.
Schubert Bros. Gear Co., Oneida, N. Y.
Spring Perch Co., Bridgeport, Conn.

Spokes.
Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.
Koller & Co., J. B., Mechanicsburg, Pa.

Trimming Materials.
Stevens & Sackett Co., New Haven, Conn.

Varnishes, Paints and Japans.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Harland & Son, Wm., London and New York.
Johnston Paint Co., R. F., Cincinnati, O.
Masury & Son, John W., New York and Chicago.
Nobles & Hoare, London, Eng.
Pierce Co., F. O., N. Y. City.
Pomeroy & Fischer, N. Y. City.
Smith & Co., Edw., N. Y. City.
Standard Varnish Works, New York City.
Valentine & Co., New York, Chicago, Boston, Paris.
Willey Co., C. A., Hunter's Point, New York City.

White Lead.
Eagle White Lead Co., Cincinnati, Ohio.

Wheels.
Crane & MacMahon, New York.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.
Shortsville Wheel Co., Shortsville, N. Y.
Wapakoneta Wheel Co., The, Wapakoneta, Ohio.

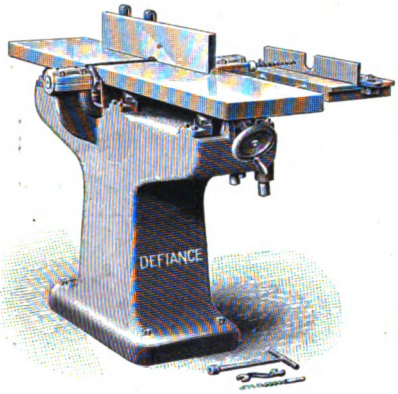
Wheel Stock, Bent Wood, Etc.
Crane & MacMahon, New York.
Koller & Co., J. B., Mechanicsburg, Pa.
Tucker Wood Work Co., Sidney, Ohio.

Digitized by Google

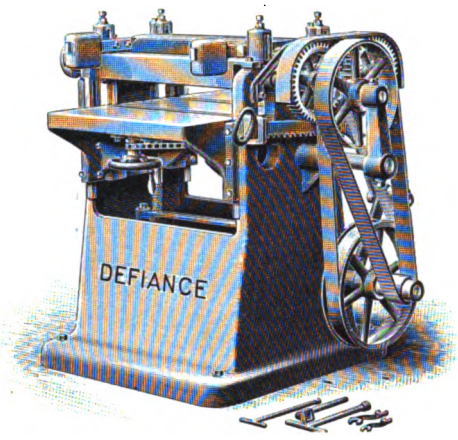
"DEFIANCE" WOOD-WORKING MACHINERY

Invented and Built by

The Defiance Machine Works
Defiance, Ohio



12-in. Hand Planer with Boring Attachment

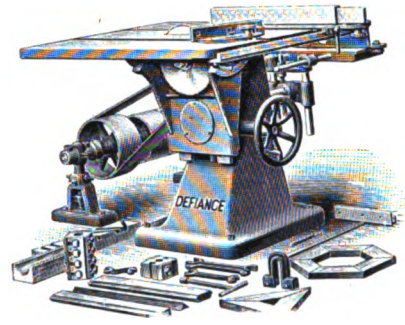


24-in. Single Surface Planer.

These Machines are made in large numbers. They are of a Strictly High Quality and are Sold at Moderate Prices.

For Making

Hubs, Spokes, Wheels, Wagons, Carriages, Rims, Shafts, Poles, Neckyokes, Singletrees, Hoops, Handles of all Kinds, Insulator Pins, Bobbins, Spools, Table Legs, Oval Wood Dishes and for General Wood Work.



No. 8 Variety Saw—Rip and Cut-off

The Fairfield Rubber Co.

Manufacturers of Carriage Cloth, Imitation Leather, etc. For Automobiles and Carriages

Fairfield - - - Connecticut

Headquarters for "The H. D. Smith & Co.'s" Carriage and Wagon Forgings

JACOB GERHAB

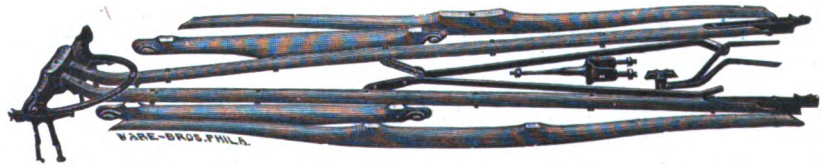
DEALER IN

Carriage Cloths, Leathers and Trimmings, Wagon and Cart Material

Salable prices and all information cheerfully furnished

158, 160, 162 and 164 North Third Street
PHILADELPHIA, PA.

"OLD RELIABLE"



IRONED-UP SETS COMPLETE AND ALL STYLES OF FINISHED

Gear Woods

The J. A. & D. P. COOPER CO. **Struthers, Ohio**

Please mention "The Hub" when you write.

Digitized by Google

ECCLES BALL-BEARING COUPLINGS

The cut shows our coupling bolted to axle, and the form our flat leather bushing takes when the shafts are placed and locked in the coupling. The leather can be securely fastened in by the user, by driving a soft wire nail through the small hole we drill, which clinches it.

When the shafts are removed, the bushing does not come out, but stays in the Coupling where it belongs. NO LOST BUSHINGS WHEN YOU USE OUR COUPLINGS.

We would like to send you our circular and have you try our Couplings. They will save you money.



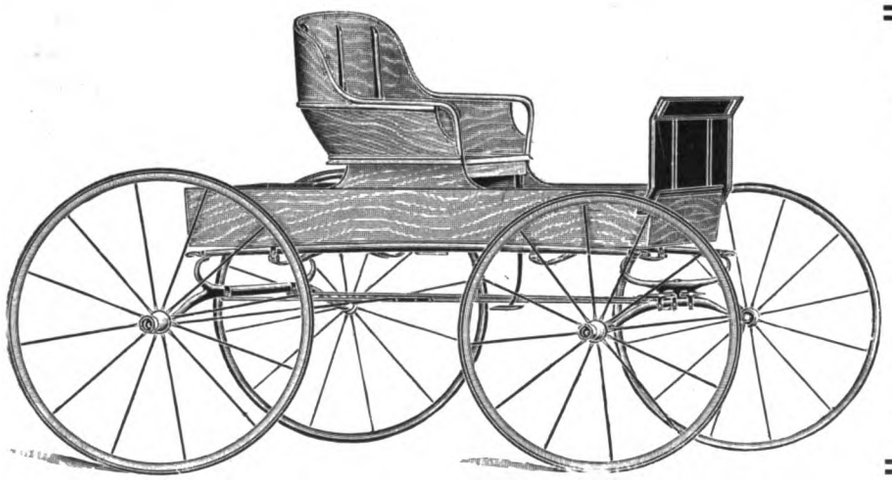
Patented Nov. 25, 1902.

The spring is pivoted at the front so that it can be turned forward out of the way of the wrench while clipping the Coupling to the axle.

These are two of the good points, but there are plenty more desirable features in our Couplings.

We also have a Catalogue showing our full line of CARRIAGE and WAGON FORGINGS, all of which we make

RICHARD ECCLES COMPANY, AUBURN, N. Y.



No. 215

SIDE BAR ROAD WAGON

ATTRACTIVE, ROOMY and POPULAR

One of our thirty styles that enjoy the call of live builders. Have you seen the latest in cutunders? If interested, see us.

We also build forty different types of gears and make a specialty of tops and trimmings.

WORK-IN-THE-WHITE

Would you like our catalogue?

AUGUST SCHUBERT GEAR CO.

ONEIDA, N. Y.

J. B. Koller & Company

Manufacturers of all kinds and sizes of

Finished Spokes and Bent Rims

Also all kinds of

SLEIGH, SLED AND BOB SLED RUNNERS

MECHANICSBURG, PA.

MILLER BROTHERS

Builders of

CARRIAGES

IN THE WHITE

AND

Automobile Bodies

AMESBURY, MASS.

Digitized by Google

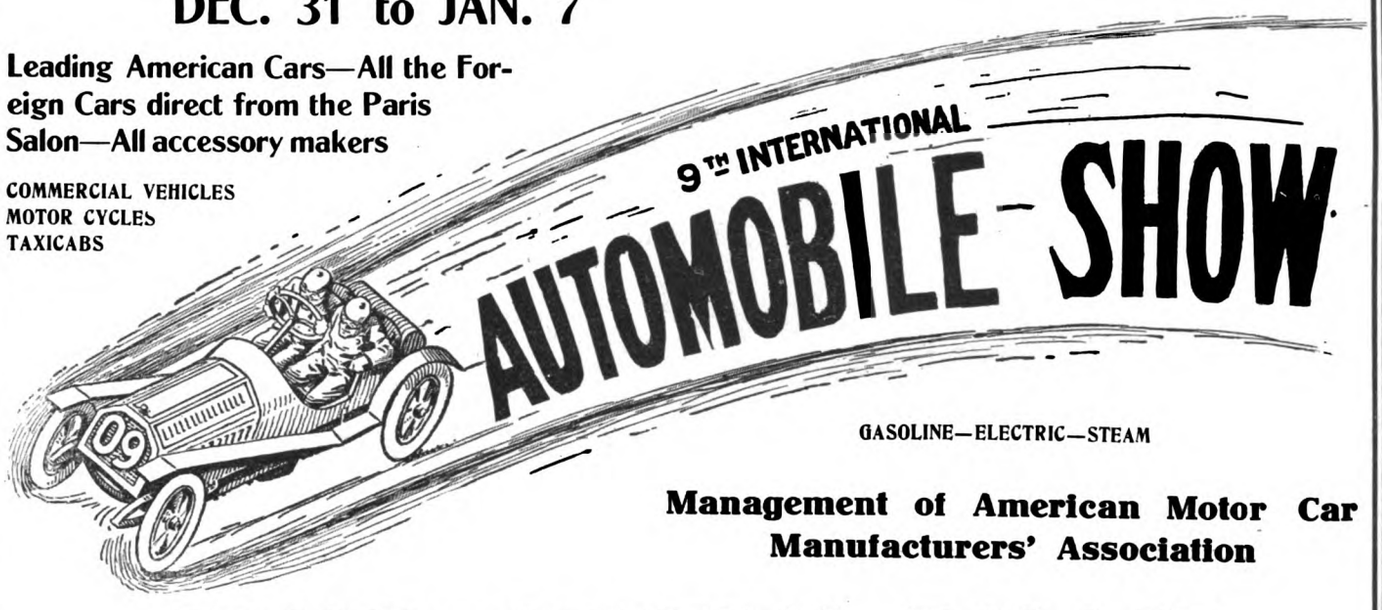
OPENS NEW YEAR'S EVE

Finest Decorations by S R. BALL CO. ever offered at any Motor Car Exhibition

DEC. 31 to JAN. 7

Leading American Cars—All the Foreign Cars direct from the Paris Salon—All accessory makers

COMMERCIAL VEHICLES
MOTOR CYCLES
TAXICABS



Management of American Motor Car Manufacturers' Association

GRAND CENTRAL PALACE

43d St. and Lexington Ave., New York **Admission, 50c.; Tuesday, $1.00**



THE FRANTZ BODY MFG. CO., Akron Ohio



Something Entirely New

By using our **PENINSULAR BALL BEARING** attachments you can change any common axle job into a ball bearing job in 10 minutes time. It is not necessary any more to carry ball bearing axles in stock.

After the buggy is completed as a regular common axle job you can in 10 minutes change it to a ball bearing job. Let us tell you about it.

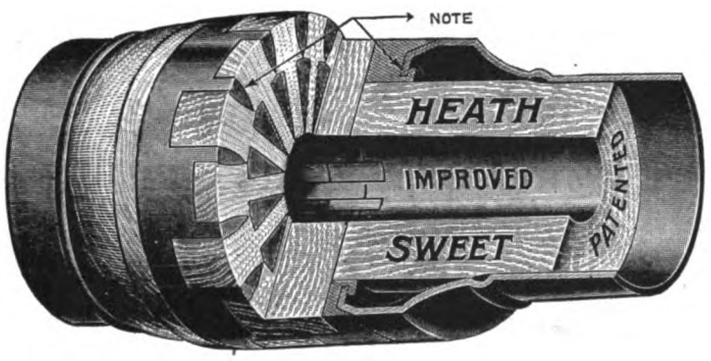


The Sparks-Withington Company

Jackson, Michigan

Digitized by Google

SOMETHING NEW



NOTE POSITIVE POINTS.

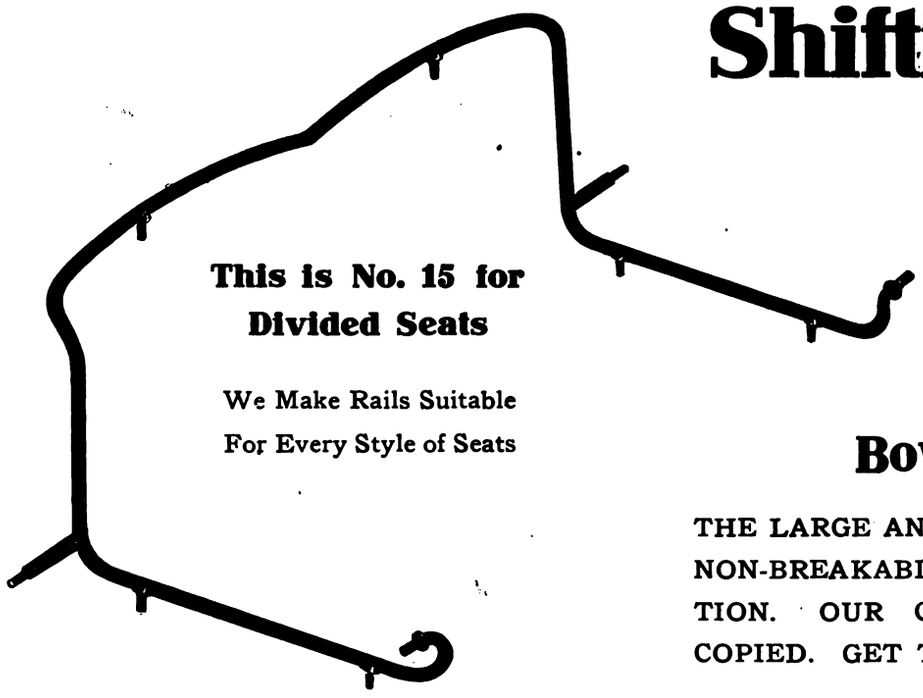
1—Same Spoke Lock as Original Sweet.
2—No Wooden Cap on either end to Split or become Loose in any way.
3—Solid Wood from Back to Front.
4—Center and Front Bands joined with a Perfect Internal Lock, making a Solid Band from Rear of Spoke to Out End of Point.
5—Is as Light as the Sweet or Wood Hub with Bands of the Same Size.
6—The Style which the Best Carriage Builders in the Country are Using.

In Ordering Specify **HEATH HUB**

MANUFACTURED BY THE

Shortsville Wheel Company

Shortsville, N. Y.



This is No. 15 for Divided Seats

We Make Rails Suitable For Every Style of Seats

Shifting Rails

FOR

Auto Buggy Seats

Bow Sockets

THE LARGE AND STRONG KIND, WITH OUR NON-BREAKABLE BACK BOW CONSTRUCTION. OUR CONSTRUCTION HAS BEEN COPIED. GET THE ORIGINAL.

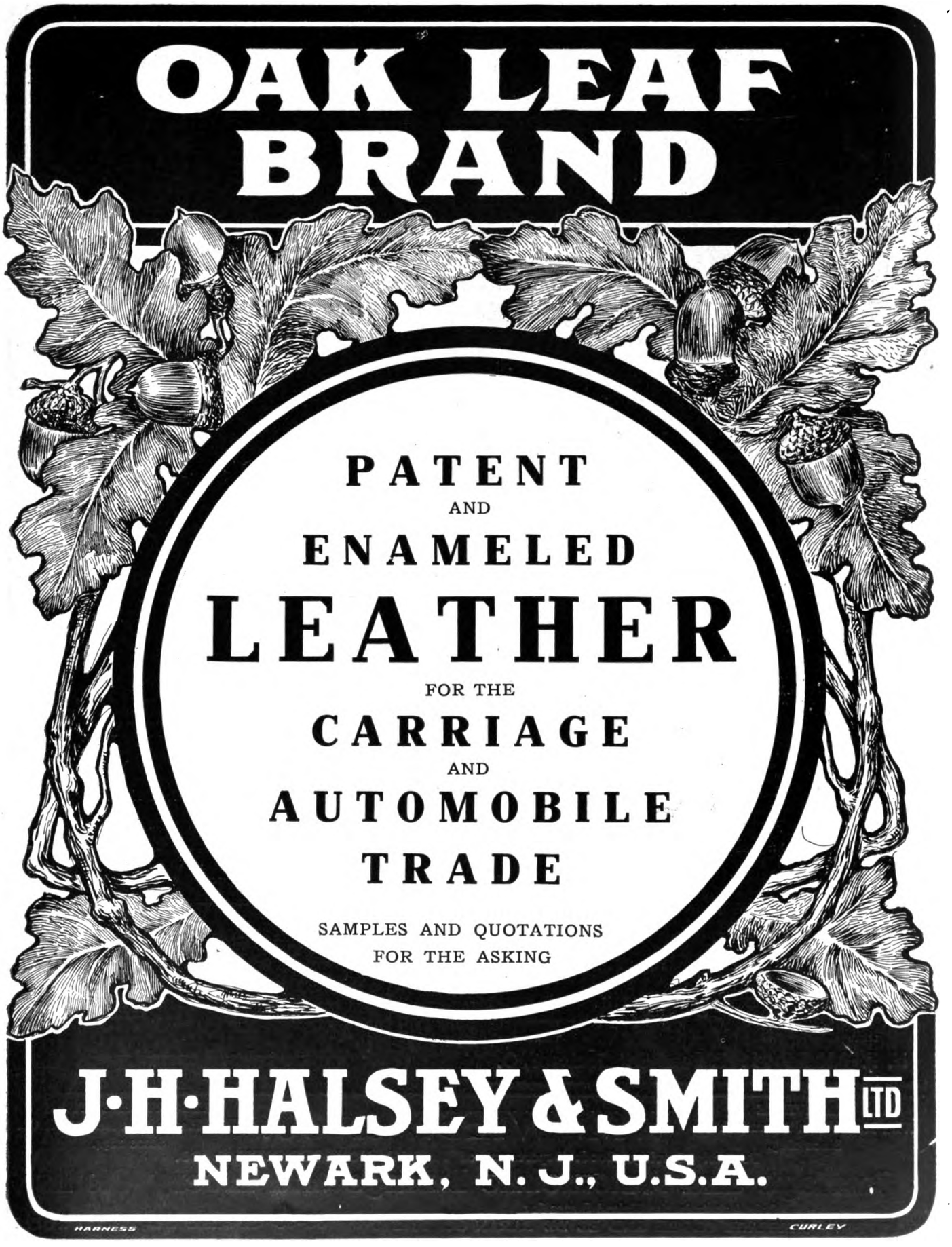
Top Joints, Canopy Top Standards, Etc.

CORTLAND FORGING COMPANY, Cortland, N. Y.

Home of AJAX Auto Bow Sockets

Please mention "The Hub" when you write.

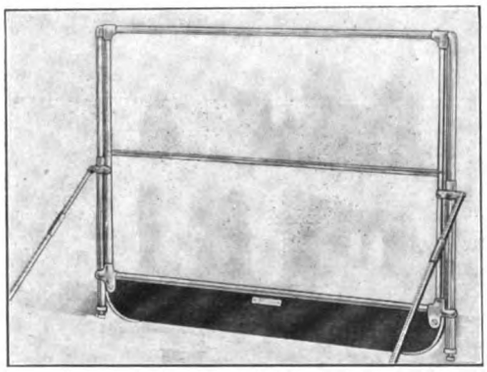
Digitized by Google



Please mention "The Hub" when you write.

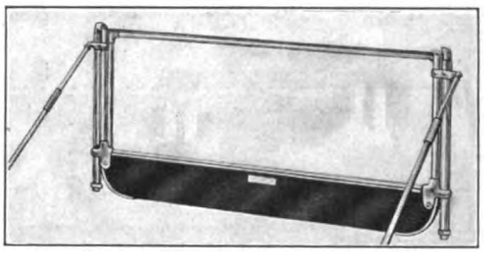
Digitized by Google

WILL NOT RATTLE—TELESCOPE WIND SHIELD





Try one and be convinced. Get a Wind Shield that is all we claim for it—absolutely the best on the market; one for which you need never make an apology; one that is not only a Wind Shield but an improvement to any car.





BURTRAM & LAMOREAUX,

72 Fort Street East, Detroit, Mich.

Our Carriage or Spring Edge Cushion Frame



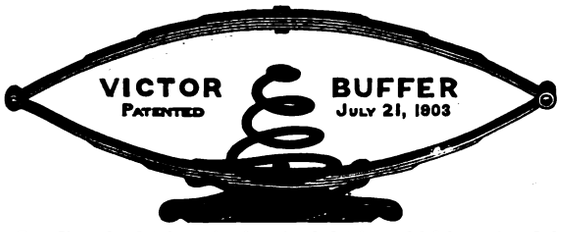
Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.

NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

For Weak or Overloaded Springs.

VICTOR STEEL SPRING BUFFERS

Save wagon, prevent breakdowns, and add materially to the carrying capacity. If your dealer does not have them write to us direct.



Made in Four Sizes: 0, 1 1-4 in. spring & under; 1, 1-4 in. to 1 1-2 in. spring; 2, 1 1-2 in. to 2 in. spring; 3, 2 in. to 2 in. spring.

Carrying capacity of each spring: No. 0, 400 lbs.; 1, 750 lbs.; 2, 1000 lbs.; 3, 1250 lbs.

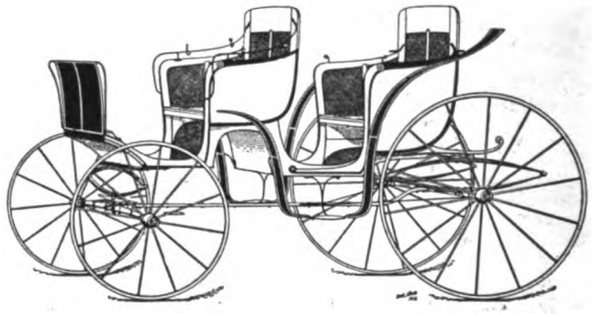
Manuf'd by INDIANAPOLIS BOLSTER SPRING CO.
INDIANAPOLIS, INDIANA.

BODIES in the WHITE

NEW STYLES FOR

Motor Cars and Carriages

WORK BUILT TO ORDER, IF DESIRED



We Also Manufacture

TOPS AND TRIMMINGS, COMPLETE VEHICLES, GEARS AND SEATS

IN THE WHITE

Send for Catalogue and Net Prices.

SCHUBERT BROS. GEAR CO.

ONEIDA, NEW YORK

BRAZING SLEEVES



For Putting on Rubber Tires.
No Filing or Scarfing.



LINED UNLINED

H. F. WHITE, 111 E. Pearl St., Cincinnati, O.



WM. WIESE
With Hardt, Von Bernuth & Co.
Since 1883.

WM. WIESE & CO.

ALBERT MAERTENS
With Hardt, Von Bernuth & Co.
Since 1894.

Formerly Carriage Goods Department of HARDT, VON BERNUTH & CO.

Carriage and Automobile Linings and Livery Cloths

Sole Agents in the United States for
WULFING'S CARRIAGE CLOTH AND EL DE BARAN GOATSKIN.

66-68 Greene St., New York

Please mention "The Hub" when you write.

Digitized by Google

THE BRADLEY SHAFT COUPLING



OPEN

Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME!

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1½ in. in section.

C. C. BRADLEY & SON, Syracuse, N. Y.



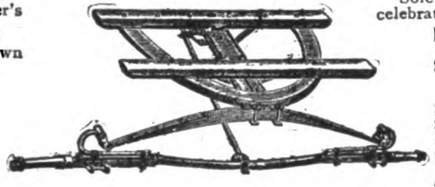
CLOSED

FITCH GEAR CO.

ROME, N. Y., U. S. A.



Kramer's Patent Lowdown Gear.



Manufacturers of over

40 STYLES of GEARS

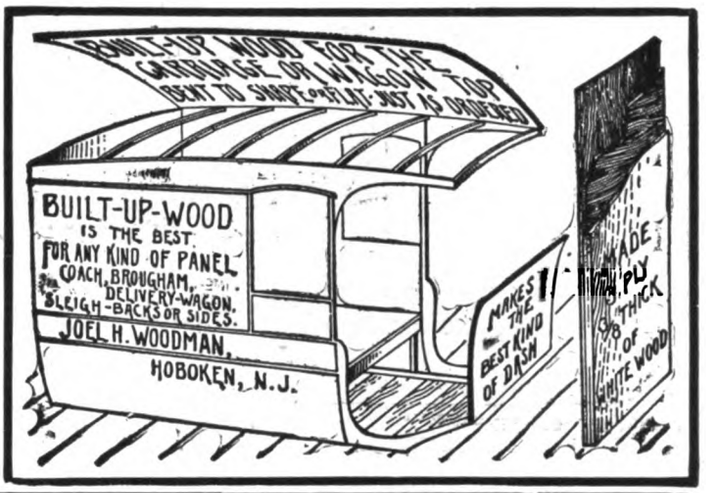
From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.

Sole Manufacturers of the celebrated

Kramer Lowdown Short Turn Gear

It is the Finest Gear for Drop Centre-Body for Milk, Bakers' or Butchers' Wagons on the market.

Send for our No. 22 Catalogue, just out.



Axles

A complete line of Wagon and Carriage Axles—Common, Concord, Farm Wagon, Half Patent, Long Distance, Collinge and Mail Patent. Empire Ball Bearing Axles. Made only by

SHELDON AXLE COMPANY, Wilkes-Barre, Pa.

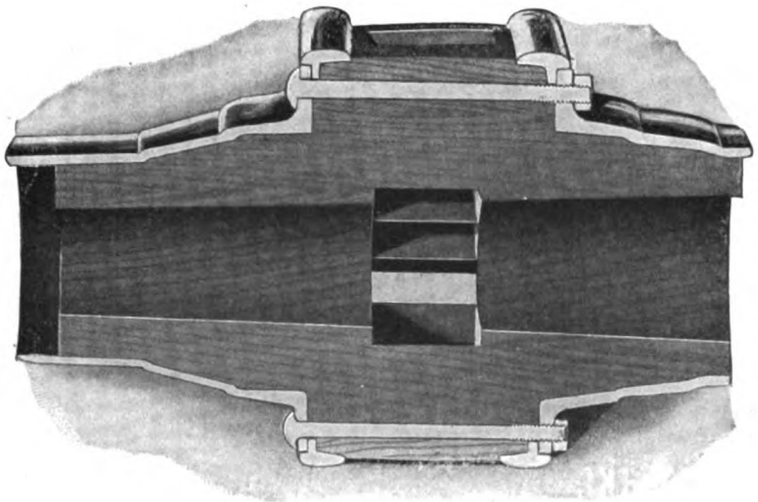
The Best and Easiest Riding Springs, for both Light and Heavy Vehicles. We have had very great success with our Automobile Springs : : : : : :

Springs

Please mention "The Hub" when you write.

Digitized by Google

The American Wood Block Co., Delphos, O.



SECTIONAL VIEW.

Hub Blocks

Green—Air and Kiln Dried. Sold by grade or timber run. Compressed blocks or otherwise. 3 in. to 12 in. diameter. Stock kept up to standard quality and ready for shipment at all times.

GILLETTE'S

"IDEAL"

HUB

It stands the Racket

The **IDEAL** hub makes the strongest wheel. Repairs are less than on any other style; actual use has proven these facts.

IDEAL is metal protected, wood to wood center, means elasticity; simplicity of construction, easily and quickly repaired, driven spokes best of all, no metal to corrode.

IDEAL has the patented inverted flange that prevents lateral strain.

IDEAL means less tire resetting.

Try it—it is guaranteed.

We want the wheel makers to use the **IDEAL** in their wheels.

The American Wood Block Co.

DELPHOS, OHIO

HUB BLOCKS HUBS DIMENSION STOCK

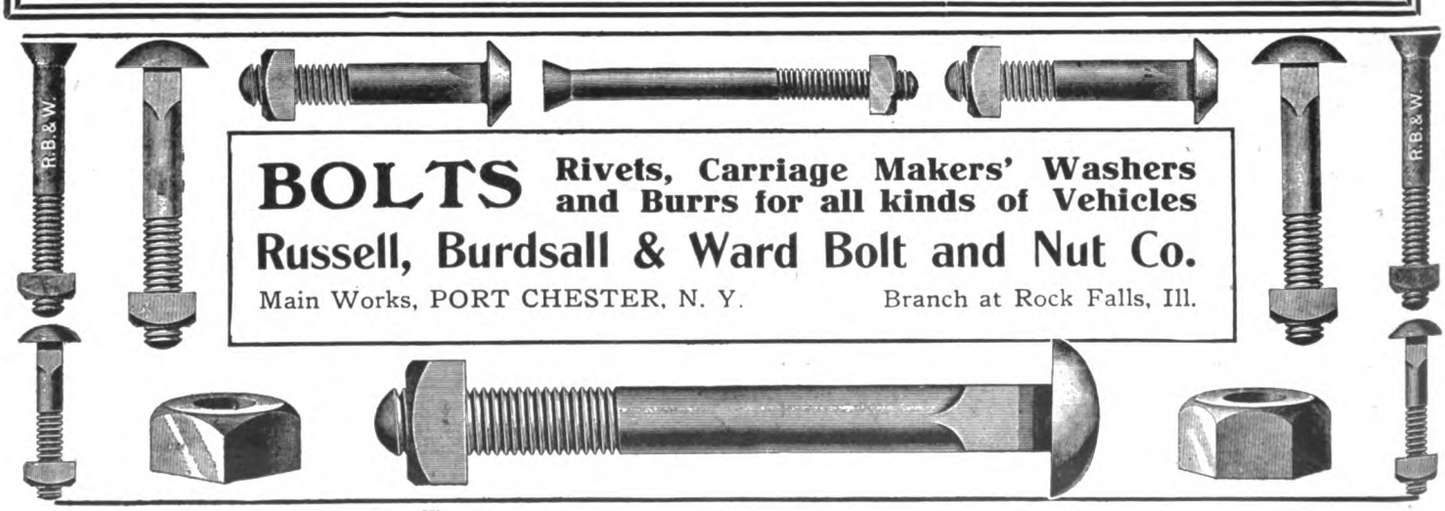
PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

DALZELL AXLE CO., South Egremont, Mass.



BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES } **C. T. RAYNOLDS & CO'S** { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES }

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

HIGH CLASS ENGLISH VARNISHES

Nobles & Hoare

Cornwall Road, Stamford Street

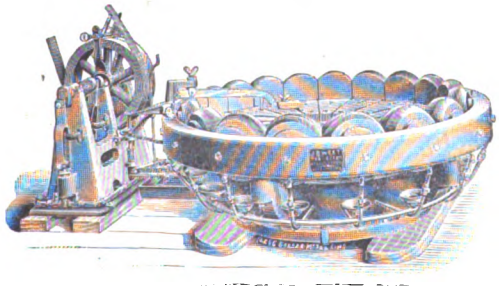
LONDON

TRADE NOBLES & HOARE NH LONDON MARK

Sole Agents in United States **POMEROY & FISCHER** New York

28 and 30 Frankfort St. (P. O. ox 1224)

THE FIRST TIRE SETTER

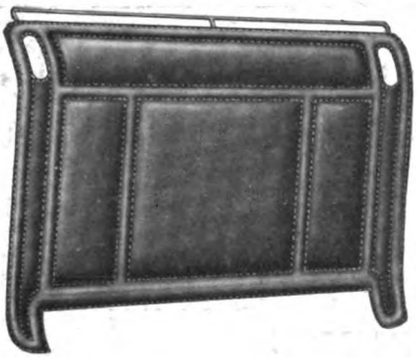


you ever heard of was a **"WEST"**—probably, for they were on the market several years before any other and you are hearing more about them every year. Many of the older users are loudest in their praise. That's because they stand the test of time—they're made that way. Some of our Hydraulic machines have been **in use fourteen years** and are doing as good work now as when first installed. **Now**, we don't claim our machines are best simply because they have been longest on the market, **but because** we have been making a study of cold tire setting all these years and improving our machines as experience and observation taught **us**, and when you buy a **"West Hydraulic"** you get the benefit of this experience. Some people knowing **our** machines would set tires cold satisfactorily, thought some other would do as well—and the price was cheap—also machine. Now they wish they had bought a **"West Hydraulic."** **If you make a similar mistake it's your own fault.**

Buy a **"West Hydraulic"** and be happy. Hand or Power machines.

THE WEST TIRE SETTER COMPANY, Rochester, N. Y.

Digitized by Google



No. 326. With Raised Rail.

A Wing Dash with a Rail Welded Solid

NICKEL PLATED OR JAPANNED

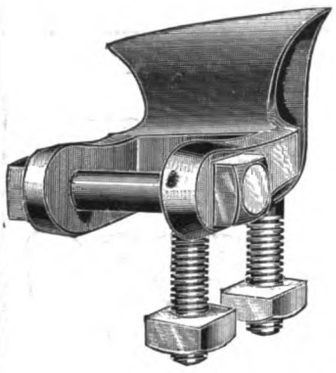
Makes the Best Selling Job

McKinnon Dash Company

Cincinnati, O.
Troy, O.

Buffalo, N. Y.

St. Catharines
Ontario



Skewed Shaft Couplings

Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips 5/8 or 3/4 width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

1908 Catalog "H" on application.

COLUMBUS BOLT WORKS, Columbus, O.



Kokomo Solid Rubber Tires

¶ In rubber substance the Kokomo Solid Rubber Vehicle Tire is truly **SOLID.**

¶ Solid with the pure stock that has made them an exception to the ordinary tires of commerce.

¶ In Kokomo quality there is an established standard that is recognized as the highest ideal of tire construction. The Kokomo is a standard tire in every respect.

¶ Kokomo Tires always score in the running, and the longer the test the more convincing the results.

Kokomo Rubber Company

Kokomo, Indiana, U. S. A.

Digitized by Google

The Hub



The marvellous growth of the automobile industry, the crowds at the shows, and the large space devoted to the subject by the daily press attest the great and increasing popularity of the self-propelled vehicle.

In this issue of The Hub will be found interesting and impartial reports of the most important features of the recent European and American shows.

Oldest Carriage Journal in the World

1858 1909

CURLEY-NY

Vol. L. No. 10 JANUARY, 1909

Digitized by Google

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

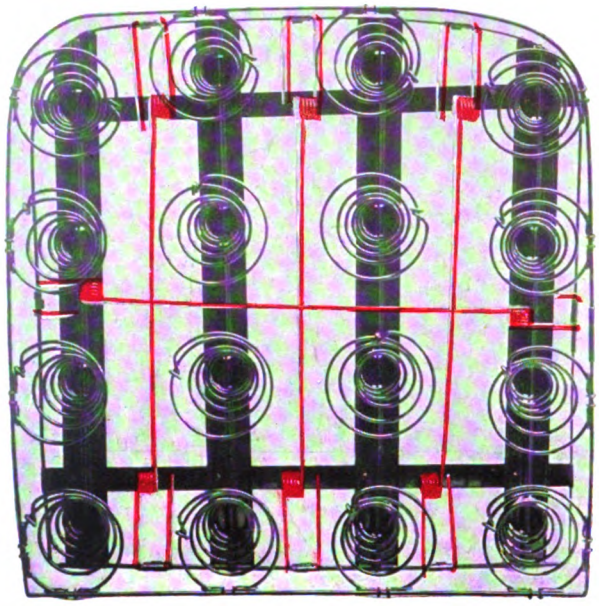
SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

ROYAL ARCH AUXILIARY SPRINGS



Soft Face Construction. Patented.

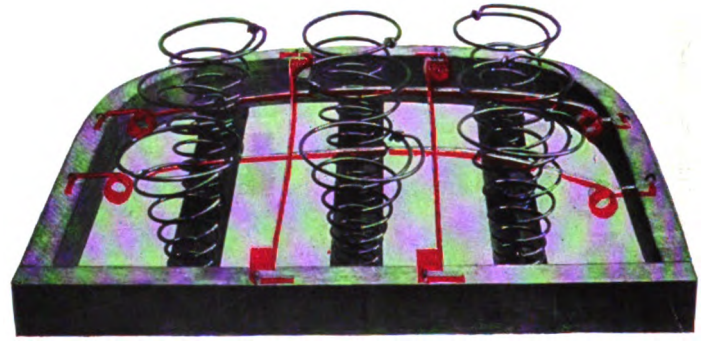
Auxiliary Spring & Ventilating Button Co.

DETROIT, MICH.

ROYAL ARCH AUXILIARY SPRINGS prevent the complete depression of the coiled springs, relieve the coils of the severe shocks, and greatly lengthen the life of the cushion. A cushion with Royal Arch Springs will never sag, and

FORTIFIES THE RIDER AGAINST THAT SUDDEN UNEXPECTED JAR

Will cost no more than the common construction. Why? Write us.



Wood Frame Construction. Patented.



CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

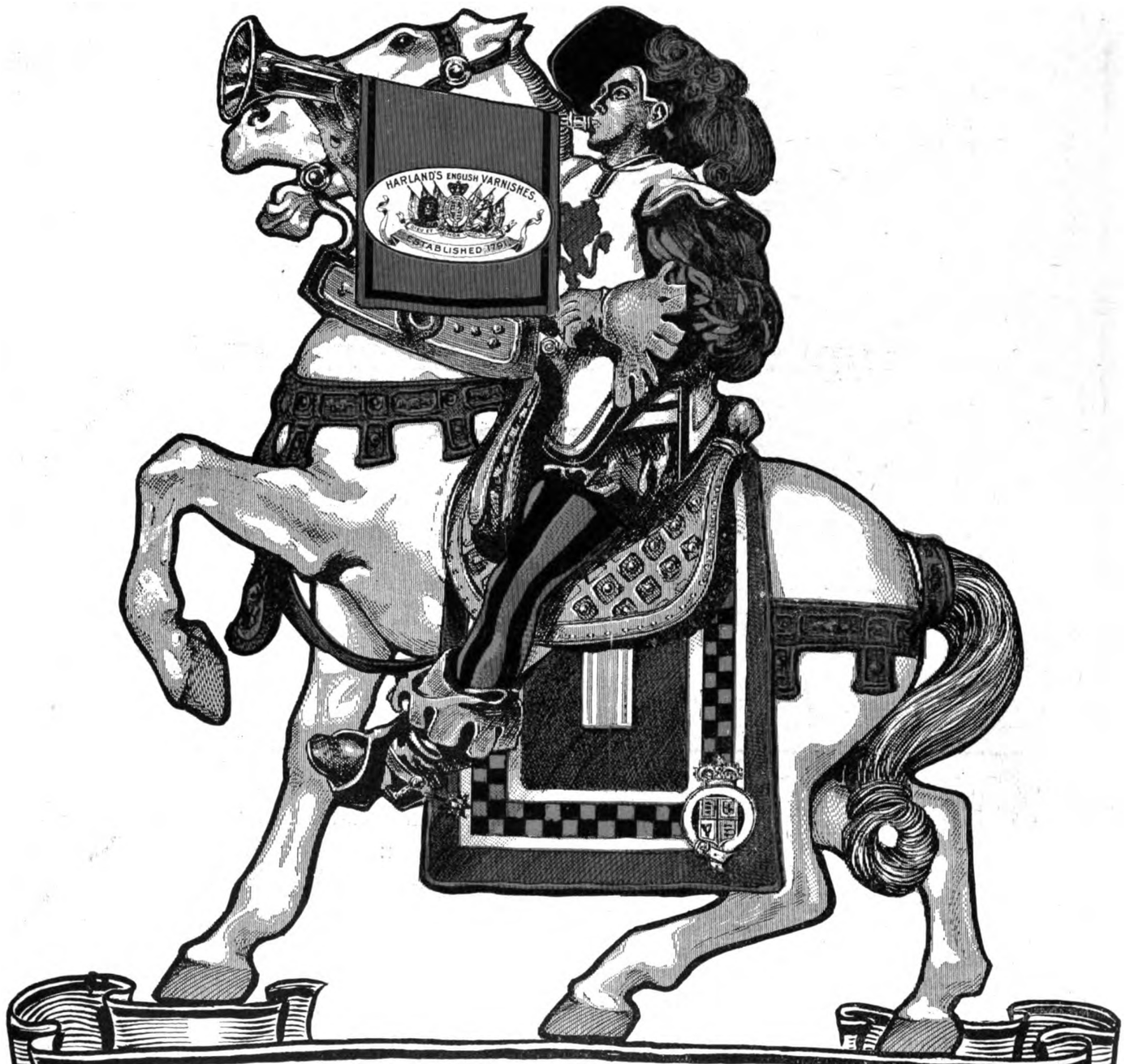
Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google



The renown of Harland's English Varnish has been heralded to every part of the world, and its sterling merit recognized by all vehicle builders who desire strictly high-grade varnish. Quality is our slogan, and it is our unsurpassed quality which has given our varnishes a universally pre-eminent position and made them the standard with which all others are compared.

For the Best Wearing, Lasting and Most Beautiful Finish, Use

HARLAND'S ENGLISH VARNISH

It's the cheapest in the end.

WM. HARLAND & SON

FACTORIES:
Merton, London S. W., England

AMERICAN HEADQUARTERS:
168 Center St., New York

WESTERN MANAGER: C. W. SCHOOLEY
40 Dearborn St., Chicago

General Manager for United States and Canada, H. HAGGER

Digitized by Google

JOHN W. MASURY & SON

MANUFACTURERS OF

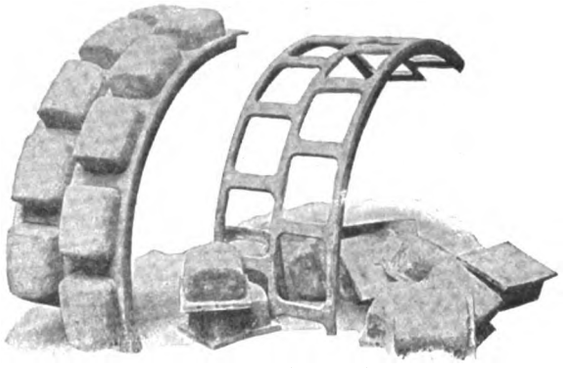
Superfine Coach Colors and Varnishes

NEW YORK——AND——CHICAGO

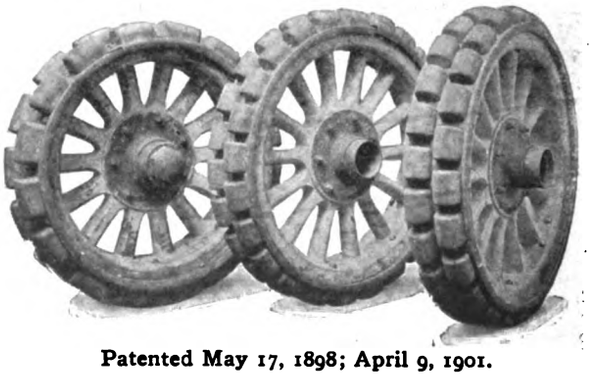
SOLVED!

Is the way the motor car experts express themselves on the subject of tires for commercial motor vehicles after seeing and using the :: :: :: :: :: :: ::

KELLY-SPRINGFIELD SECTIONAL TIRE



Double or Single Track. Sectional View of Double Track.



Patented May 17, 1898; April 9, 1901.

With a grip on the road that means progress and security from the fault of solid tires—that of crowding the rubber ahead under load, which means disintegration—the motor wagon and truck owner will find in the Kelly-Springfield Sectional Tires the best tire for all heavy cars. Each section is dependent upon itself. If interested, write

Consolidated Rubber Tire Company

NEW YORK, N. Y.—and—AKRON, OHIO

Branches—BOSTON CHICAGO PHILADELPHIA ST. LOUIS DETROIT CINCINNATI SAN FRANCISCO

Digitized by Google

Made of New Rubber Fresh From the Trees

The new rubber used in Goodyear tires is now quoted at $1.00 a pound.

We could make tires of "reclaimed" rubber that costs 10 cents or "Lapori" and "Guayule" that cost 35 cents a pound, and thereby effect an immediate saving of many dollars.

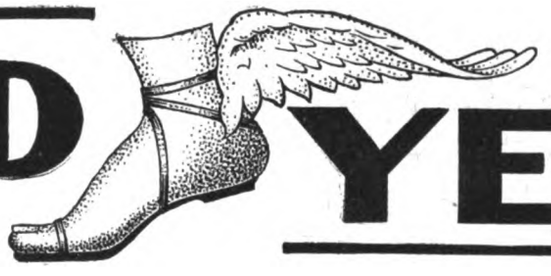
But we shouldn't keep on bringing pleased customers back to our dealers—nor should we make *more* pleased customers every year, as we do now.

It is the "reclaimed," "Lapori" or "Guayule" rubber tire that begins to wear out and tear out before it sees any actually hard service.

Rubber in the reclaiming process is treated with acid and subjected to a heat of 370 deg. Fr. If any life remains it is literally burnt out.

New rubber is expensive, but *it is worth the price* in the satisfaction it gives.

GOODYEAR



There's bigger business than ever right at hand for the dealer who handles the full Goodyear line of solid rubber tires! Or the manufacturer or dealer who equips his vehicles with these tires.

Each Goodyear Tire shows a *special improvement* over all other solid rubber tires—an improvement that overcomes the difficulties with which users of solid rubber tires have had to contend.

You can *point out* these Goodyear improvements. Your customers can *see* them. You've got an argument to sell a Goodyear Tire *every time*—an argument that no other tire gives you.

There's a Goodyear Solid Rubber Tire for every kind of vehicle that uses solid rubber tires.

Our Sidewire Tire the only solid tire specially adapted to auto buggies. See the spring steel plates that hold the sidewires, and the extra reinforcement by internal retaining wire. We furnish this tire in standard conical shape or with corrugated broad tread.

Our Eccentric Cavity Cushion Tire with nearly twice the wearing depth of the ordinary tire. This is the Eccentric Cavity Cushion Tire with Canvas Guides which absolutely prevent the wrong application of the tire.

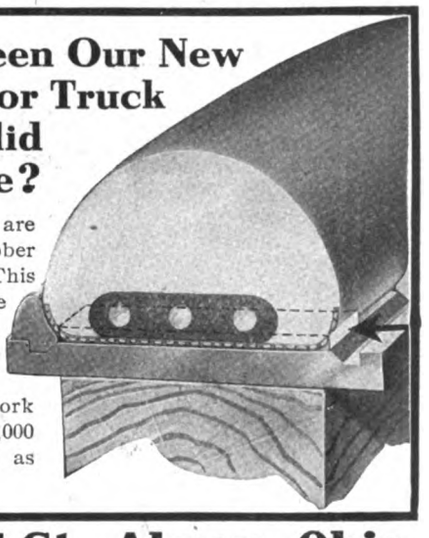
Our Wing Tire that keeps all dust, grit, mud and water from getting between the tire and the channel.

There's more business in the full Goodyear line of Solid Rubber Tires than in any other combination you can think of.

Write us. Start a letter to us today asking us about our special agency proposition.

Have You Seen Our New Endless Motor Truck Tire with Solid Rubber Base?

The retaining wires are imbedded in solid rubber and cannot tear out. This solid rubber base is made *one piece* with the soft rubber of the tire by our exclusive process. These tires on New York Trucks have run over 10,000 miles each and are still as good as when applied.



The Goodyear Tire & Rubber Co., Canal St., Akron, Ohio

Branches and Agencies:

Boston, Mass.....261 Dartmouth St.
Cincinnati, O.....317 E. Fifth St.
Los Angeles, Cal.....932 S. Main st.
Philadelphia, Pa.....1402 Ridge Ave.
New York City...64th St. and Broadway
San Francisco, Cal 506 Golden Gate Ave.
Chicago, Ill.....80-82 Michigan Ave.
Cleveland, O.....2005 Euclid Ave.
Milwaukee, Wis.....188-192 Eighth St.
St. Louis, Mo.....3935-3937 Olive St.
Buffalo, N. Y.....719 Main St.
Detroit, Mich.....251 Jefferson Ave.
Pittsburg, Pa.....5988 Centre Ave.
Omaha, Neb.....2020-2222 Farnham St.
Washington, D.C..1026 Connecticut Ave.
Atlanta, Ga.....90 N. Pryor St.
Louisville, Ky.....1049-1051 Third St.
New Orleans, La.....706-716 Barrone St.
Memphis, Tenn...181-185 Madison St.
Dallas, Tex.....111 N. Akard St.
Denver, Colo.....28 W. Colfax Ave.
Baltimore, Md.....991 Park Ave.
Kansas City, Mo.....16th and McGee St.

Please mention "The Hub" when you write.

Digitized by Google

Suggestion for a Painter's New Year Resolution

U S E

TRADE **VALENTINES** MARK

Valentine's Varnish
Lawson Varnish
Valentine's Colors

The trouble you must meet, they help to vanquish. The good results you achieve, they make more brilliant

The Use is a Good Habit

VALENTINE & COMPANY

New York Chicago Boston Toronto Paris Amsterdam

MERITAS

CARRIAGE ENAMELED **OIL CLOTH**



How much more is GUARANTEED oil cloth WORTH to you? That's how much you save by buying MERITAS—costs no more than ordinary kinds, but is GUARANTEED. At your jobbers.

Standard Oil Cloth Co.

320 Broadway, NEW YORK.

EXCEPTIONAL BARGAIN.

FOR SALE

Wheel Making Machinery

Manufactured by

The Defiance Machine Works

Defiance, Ohio

MAJORITY BRAND NEW MACHINES.

One improved double equalizing machine with two saws, 20-in. diameter, belt and counter.
One improved wheel boring and screwing machine.
One patent double drum felloe polishing machine with counter.
One improved hub polishing machine.
One double automatic tread sanding machine with counter.
One improved adjustable arm belt polishing machine.
One heavy sarven wheel riveting stand.

Machines erected in New York City.

Apply to

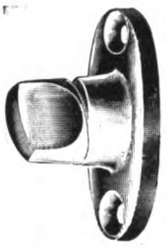
The G-L Economizer Company

1412 Times Bldg., New York

Please mention "The Hub" when you write.

Digitized by Google

Rex Curtain Fasteners



have made good. Our business and our satisfaction in these goods increases daily. They are made on the same sound principles as the old standard Brewster Fasteners (made by us), but without the fine fitting and finish. The strongest and neatest low priced fasteuers on the market to-day. Sample sent on request. Prices are way down.

The English & Mersick Co.

New Haven, Conn.

82 Years' Experience in Every Can

E.S. 1827 &CO. **Edward Smith & Co.**

CARRIAGE VARNISHES

Everything from the
Bare Wood to the Finishing Coat.

CHICAGO **NEW YORK**

A SENSIBLE GIFT

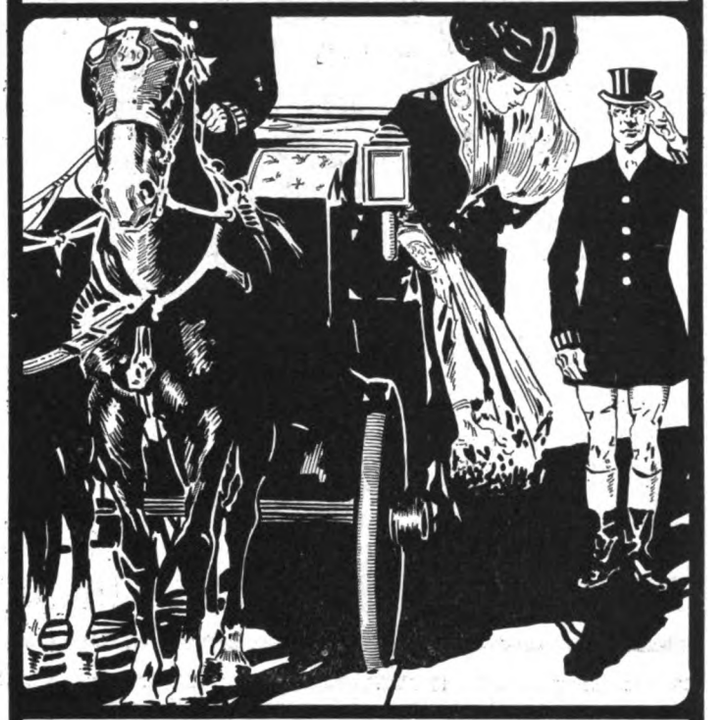


A GLOBE, MAP OR ATLAS IS MOST PRACTICAL. WILL AFFORD PROFIT AND PLEASURE TO THE ENTIRE FAMILY FOR YEARS. SPECIAL HOLIDAY OFFER. SEND FOR CATALOGUE AND PRICE LIST. ENCLOSE THIS ADVERTISEMENT WITH FIVE 2-CENT STAMPS AND WE WILL SEND POCKET MAP OF MANHATTAN.

RAND, McNALLY & COMPANY

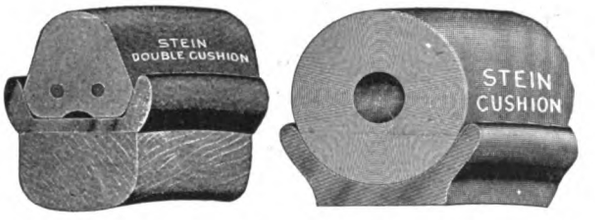
NEW YORK CITY, N. Y.

STEIN DOUBLE CUSHION TIRE



EXPERIENCE

is the only true basis on which to figure if you wish to arrive at a fact.



Our story is best illustrated in our product. Be your own judge in deciding the question of tire supremacy.

Pure rubber must naturally be an important factor in a good tire. Rubber quality is only one of the many features that has won recognition for the

STEIN DOUBLE CUSHION TIRES

Be fair with yourself and your patrons. Apply the Stein Double Cushion Tire to your work and win favor with the driving public.

DO IT NOW.

DOUBLE CUSHION TIRE CO.

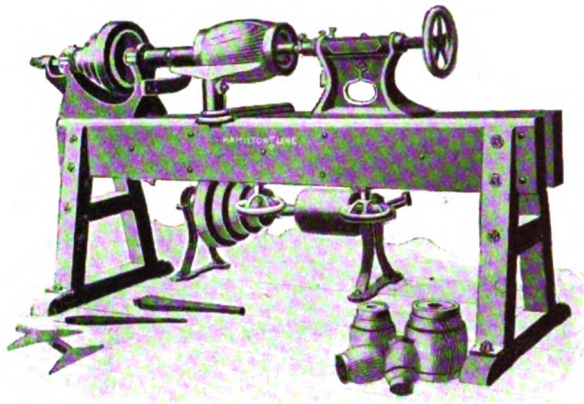
AKRON, OHIO

Digitized by Google

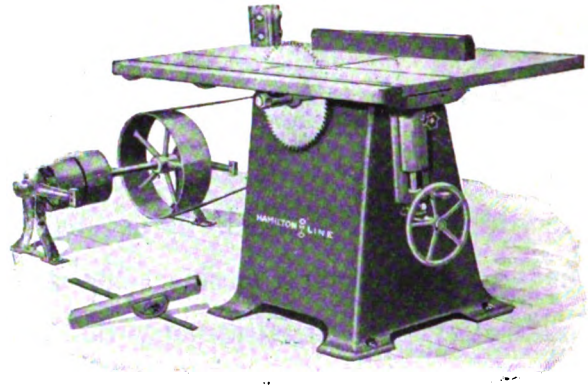
HAMILTON-OHIO LINE WOOD WORKING TOOLS

For Automobile Body and Wheel Work.

Carriage, Wagon, Hub, Spoke, Rim and Wheel Factories



Hamilton Hand Hub Lathe No. 245.



Hamilton Universal Jointer and Saw No. 103.

Disk Sanders, Belt Sanders, Spoke Sanders, Wheel Sanders, Gear Shapers, Scroll Eyeing Machines, Gear Rounders, Spring-Bar Boring Machines, Seat-Back Benders, Rim Planers, Rim Rounders, Rim Borers, Rim Cut-Off Machines, Wheel Boring & Screw Driving Machines, Spoke Lathes, Spoke Cut-Off Saws, Spoke Tenoning and Mitering Machines, Spoke Throaters, Spoke Facers, Wheel Facers, Wheel Tenoners, Hub Lathes, Hub Mortisers, Hub Borers, Wheel Boxers, Wheel Presses, Tire Truers, Tire Bolters, Spoke Cut-off Machines, Band Saws, Rip and Cross-cut Saws, Planers, Matchers, Moulders, Shapers, Boring Machines, Universal Wood Workers, etc., etc., etc.

THE BENTEL & MARGEDANT CO., Hamilton, Ohio, U. S. A.

C. A. WILLEY COMPANY

Color Grinders

AND MANUFACTURERS OF

SPECIALTIES IN CARRIAGE and CAR PAINTS, COLORS, Etc.

WILLEY'S SUPERFINE SPECIALTIES COACH COLORS TRADE MARK

92d St. Cars at Hunter's Point Ferry Pass our Factory.

Hunter's Point, New York City

CALL AND SEE US WHEN IN NEW YORK.

Digitized by Google

The Hub

Copyright, 1909, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. L. NEW YORK, JANUARY, 1909. No. 10.

THE TRADE NEWS PUBLISHING CO. OF N. Y.
Publishers of THE HUB

J. H. WRIGHT, *President.* G. A. TANNER, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

JACOB H. KLEIN, *Technical Editor.*

REPRESENTATIVES:

J. HENRY KLUNE. J. G. TANNER.

THE HUB is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of TRADE NEWS PUBLISHING CO.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

FRANCE.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

GERMANY.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

ENGLAND.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

A Sensible Drift in Vehicle Styles.

Certain European journals identified more or less with the vehicle, including the automobile industry, have been dwelling on the subject of vehicle styles. If we read carefully between the lines we cannot fail to be impressed with the feeling that there is a growing disposition among not only builders but patrons of carriage plants to get away from mere style, or style as style. In fact, it seems to be the growing vogue to regard a pronounced effort at style as bordering on the common or vulgar. If this is a correct interpretation of what seems to be a growing tendency, there is a reason for it of an aesthetic sort. In all ages the carriage has served to differentiate its owner and user from the common herd. Since carriages have come within the reach of such a large element of society, it has ceased to be a distinctive badge of social pre-eminence. Builders, in order to maintain that feeling of exclusive possession of elegant equipage, have, or their draftsmen have, strained and strained their ingenuity to devise and incorporate ideal excellence and beauty and symmetry of form and contour, as well as to impart greater attractiveness in various suspensions and arrangement of springs, axles, etc. But ingenuity has its limitations. Elegance has become common, and what is common is not elegance any longer, from the standpoint of mental impressions.

In lieu of the approaching exhaustion of the fertile romances of the draftsmen and of builders, there has developed in recent years a tendency to gaudiness of harness equipment and in vehicle adornment which is much more likely to become common than elegance of vehicle construction itself. The harness makers appear to be coming to the rescue of the carriage builders, and they are delighted to know that their efforts are appreciated. The boulevards and concourses show this drift, but it is a phase of public taste only.

On this side of the water we are not drifting in that direction, but there is a tendency to plainness of styles, or rather to a compositeness of style which embodies all the progress that has been made. There is a reason for this in the fact that the demand for palatial vehicles is subsiding. The carriage industry will be the gainer in the long run. Builders have been annoyed by the delay of jobbers and dealers waiting before sending in their specifications for the "very latest."

It is certainly time for carriage building to be standardized and relieved of capricious influences which have next to nothing to do with genuine merit. The present drift indicates that the carriage using public are satisfied with the elegant carriage as it now is—not that there is no room for further originality and ideal construction, but that future work will be along conservative lines in which genuine worth and not gew-gaws will be the point.

Wagons.

The wagon makers, from recent authoritative utterances, have evidently arrived at the conclusion that the current year will be a good wagon year. Their anticipations are based on the fact that there has been an abnormal lull in demand, and that the wagon requirements of the country have grown; also that a vast volume of agricultural and manufacturing capital is seeking investment. Notwithstanding the comparative lull in railroad construction throughout the west and southwest, the great systems of railways crossing those regions have opened up large areas of good land which are being taken up. There never perhaps was as much manufacturing capital waiting for the word "go," and that all of it will find employment at once is doubtful.

Farmers as a rule are short-handed as to wagons. Wagon users of all kinds would be larger buyers, even for their present necessities, were general conditions different.

A Little Carelessness.

Notwithstanding the voluminous mass of instruction which has for years been flowing through the vehicle press, there is still a good deal of careless and faulty painting done, and a good deal of indifference at times as to the quality of paint and varnish purchased. The main fault lies with the users of vehicles, who have never fully appreciated the value of good and frequent painting. Another reason is that the owners of vehicles, when they go to the repair and paint shop, think that the more badgering they can do to get work done cheap, the better they are off. Not all vehicle users make this mistake. Good material and good skill are

Digitized by Google

important. Many interesting tales could be told of ill-advised economies in the repair shop, but the repairman generally comes out ahead. He does what he is paid for, and if what the customer gets is not all he wants, it is his own fault.

More care and more interest is generally needed among users of vehicles in the up-keep. The old habit of leaving vehicles and implements out in the weather no longer prevails, but there needs to be a little jacking up by vehicle users generally with regard to care in painting. Perhaps the repairmen might turn a few more honest pennies if they followed up their chances of getting business without waiting for the indifferent and procrastinating users to come to the shop.

At Our Doors.

The new year opens under conditions which indicate a general and gradual improvement in all industries. There is an immense volume of idle money. The old conditions surrounding the investment of capital, which made it a jeopardy, do not exist to the same extent. Corporation management in general is under improvement. Irresponsible financeering is being hedged in. Greater responsibility to law and sound public sentiment is growing.

A knowledge of prospective requirements in most trade channels is now the possession of the leaders and followers of business. Production in all lines is now scientifically controlled, using the word for lack of a better. In years past production has been blind. Factories and mills were run on faith that the maximum output could be sold, and it generally was.

New and better business methods are gaining the upper hand. Incorporated business is largely supplanting firms. Money is cheaper. Freight rates are more amenable to law. Greater certainty exists. Loose credits are being minimized. The nation is rolling up its sleeves for a big year's work, and it is at our door.

Small Repair Shops.

A notable sign of reviving activities is seen in the establishment of a rather unusual number of carriage and wagon repair shops during the past year. Many of these are two or three men affairs, where the shop is not much more than a shed, but in which are found blacksmithing tools and equipment of no mean order and entirely different from the shops as they were started ten or more years ago. The perfection of blacksmithing equipment of late years has made shop-starting easy and profitable from the start. Many of the new little plants of two or three men and a stout boy or two are equal to the shop of ten or more years ago.

There is now no occasion for the average farmer to have his own little forge fire, as so many have had. They can get to a repair shop almost anywhere in an hour or two's drive and, what is more, they can have their repairs done right and in short order and at prices which indicate the advancement of the blacksmithing craft.

C. B. N. A. Membership.

The vigorous efforts which the C. B. N. A. committee on membership have been making and will continue to make promises to materially increase the membership of that organization. The number engaged in the industry in the United States warrants a considerably larger membership than the annual catalogue shows. The committee expects to show some big results at its next convention. It ought to be made suspicious for a carriage builder to not be in the C. B. N. A. There are possibilities for the organization which have not been realized, not only in the management of its internal affairs but in the weight it can have for the carriage building interests at large.

The impression prevails among many that the association is of no special benefit. It does not fix prices or wages; it does not settle trade abuses; it does not make it easier to do business or make more money. It brings no recognized practical benefits. Hence, they stay out and look on. The original purpose of the association was to create a more friendly feeling, and that only. It has never departed from this policy and purpose. Under this ideal standard it has reached the first rank of trade associations. Never were trade associations more necessary than to-day. The need will increase as trade and business expands. The reasons which existed at the origin of the association have multiplied in force and cogency.

New York's Future Greatness.

New York City, with subterrannean means of rapid travel and its connections with New England and western and southern railways and its bridges built and to be built, will soon become the ideal metropolis of the planet. Manhattan in a few years will be a vast den of business offices. Residential sections will expand miles and miles in every direction. With its pending and contemplated port improvements it will connect the outside world with the interior of the country as is no where else seen on the face of the globe.

The United States is about entering upon its exporting era. The world wants what it can produce and manufacture. New York is and will be in greater degree than ever its ocean gateway, through which will pour its commodities and through which will come the choice products of the world, by way of necessities and luxuries. New York has entered upon its era of 40-odd story structures. Beneath the surface will be a new city of tremendous activities, where electricity will dispatch enormous traffic at high speed. New York City will be typical of American progress and greatness, and it will, by reason of its location, ultimately become the financial center of the world.

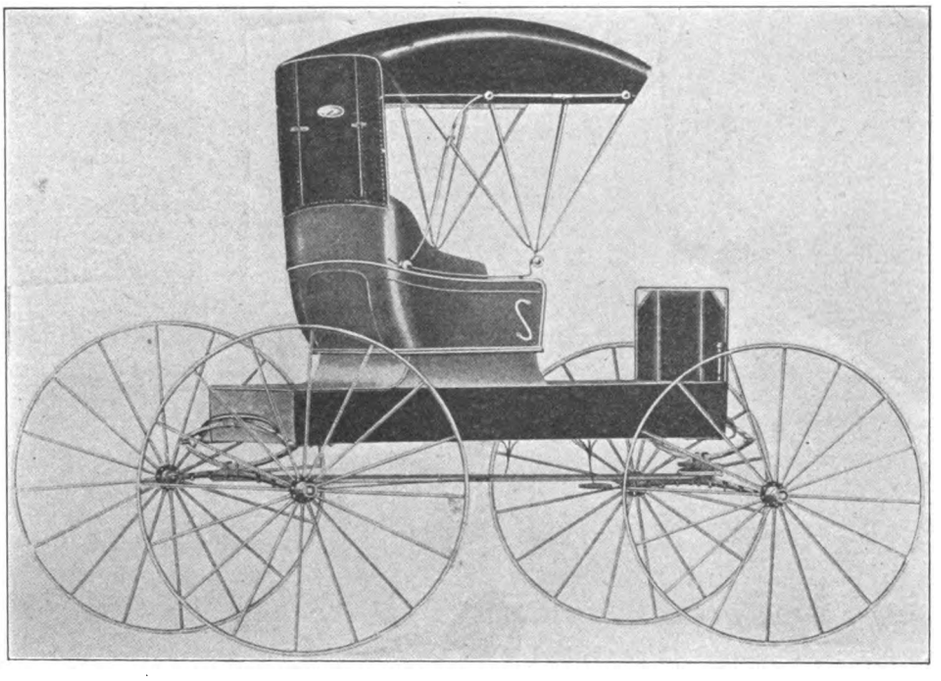
Tariff Revision.

The carriage industry can afford to view with comparative indifference the coming rearrangement of tariff duties. In all previous agitations since the Morrill Tariff of 1861 agitations have been productive of unrest, and more or less interference with business. The pending rearrangement is not causing the same apprehension. Protection has accomplished its contemplated purpose in a very large degree. The country appears to be ready for a change. To the extent that the changes to be made will reduce cost of production without interfering with wages, it will be welcome. The country nor its best posted tariff economists cannot figure out just what the outcome will be. The conviction is deeply seated that as the necessity for protection has largely disappeared, a revision can do no harm if discreetly made. It is well that it is to be made by the friends of American industries.

Whatever benefit comes to the industries and the country at large will indirectly benefit the carriage industry.

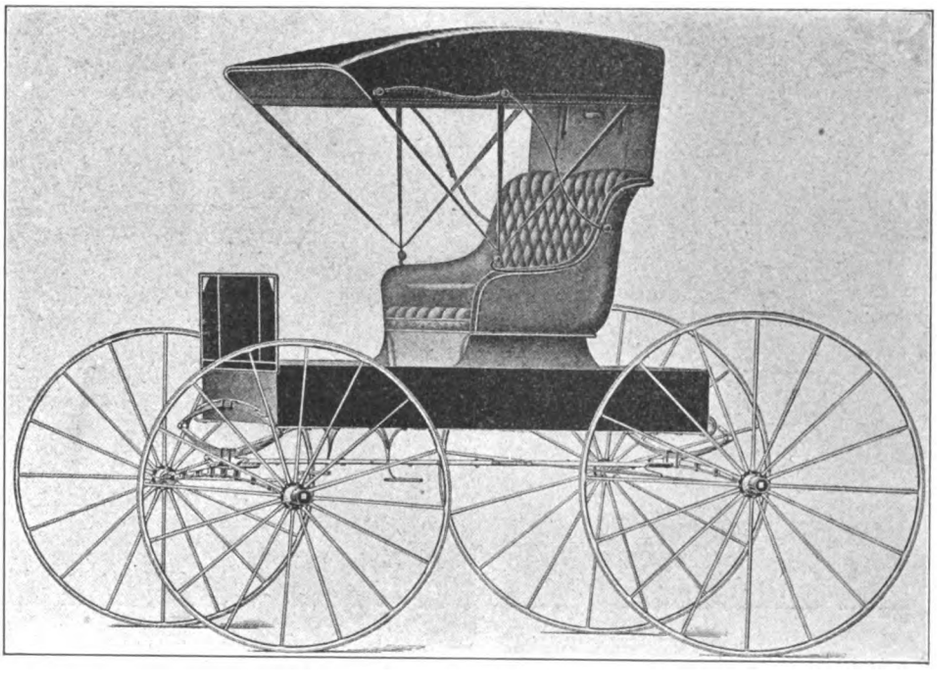
Digitized by Google

Illustrated Carriage Section, January, 1909



QUICK-SHIFT AUTO-SEAT BUGGY.

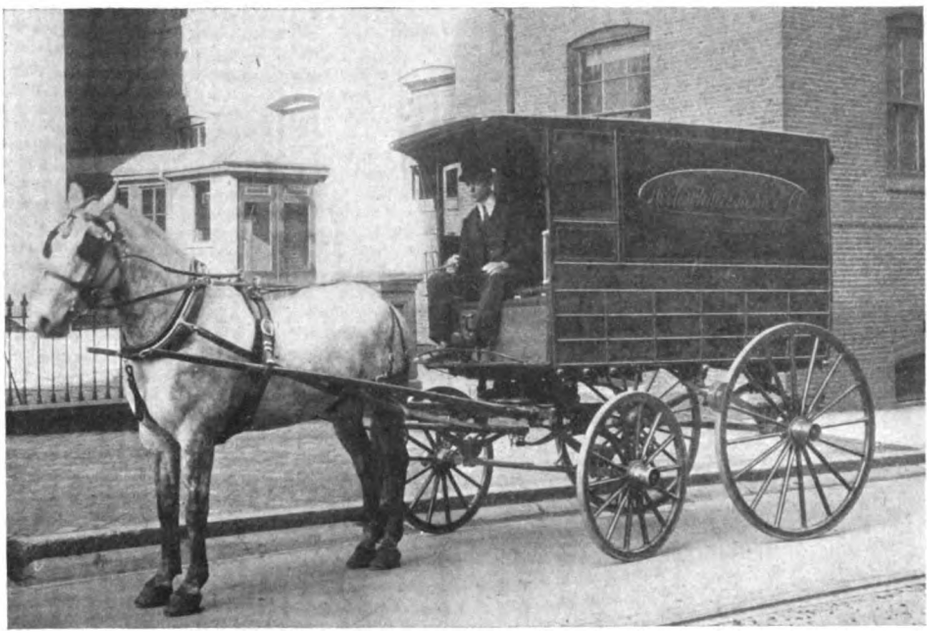
Made by John Deere Buggy Factory.



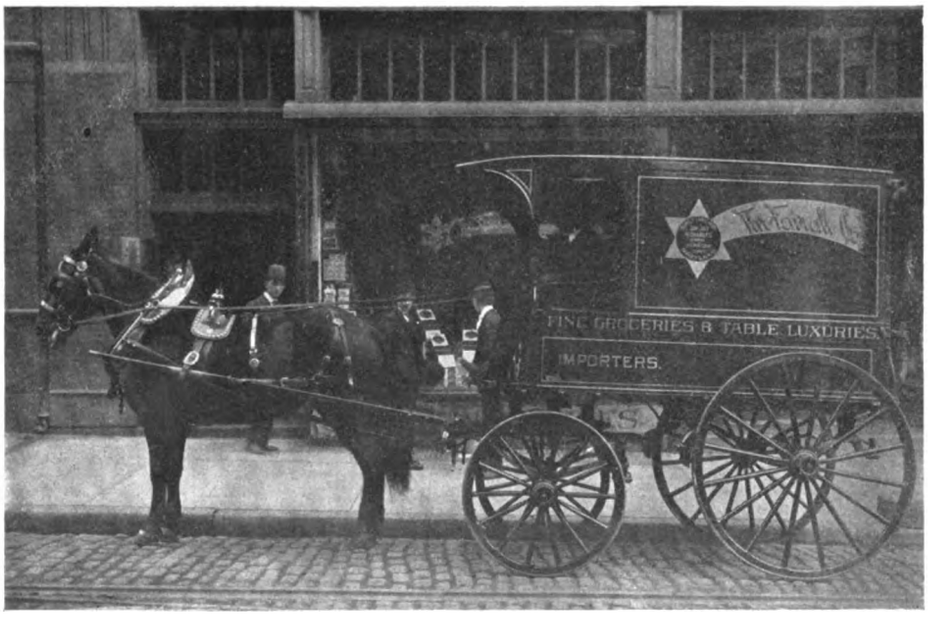
NEW AUTO-SEAT BUGGY.

Made by Parry Mfg. Co.

Digitized by Google



LIGHT WHOLESALE DELIVERY WAGON.



PLATFORM DELIVERY WAGON.

Digitized by Google

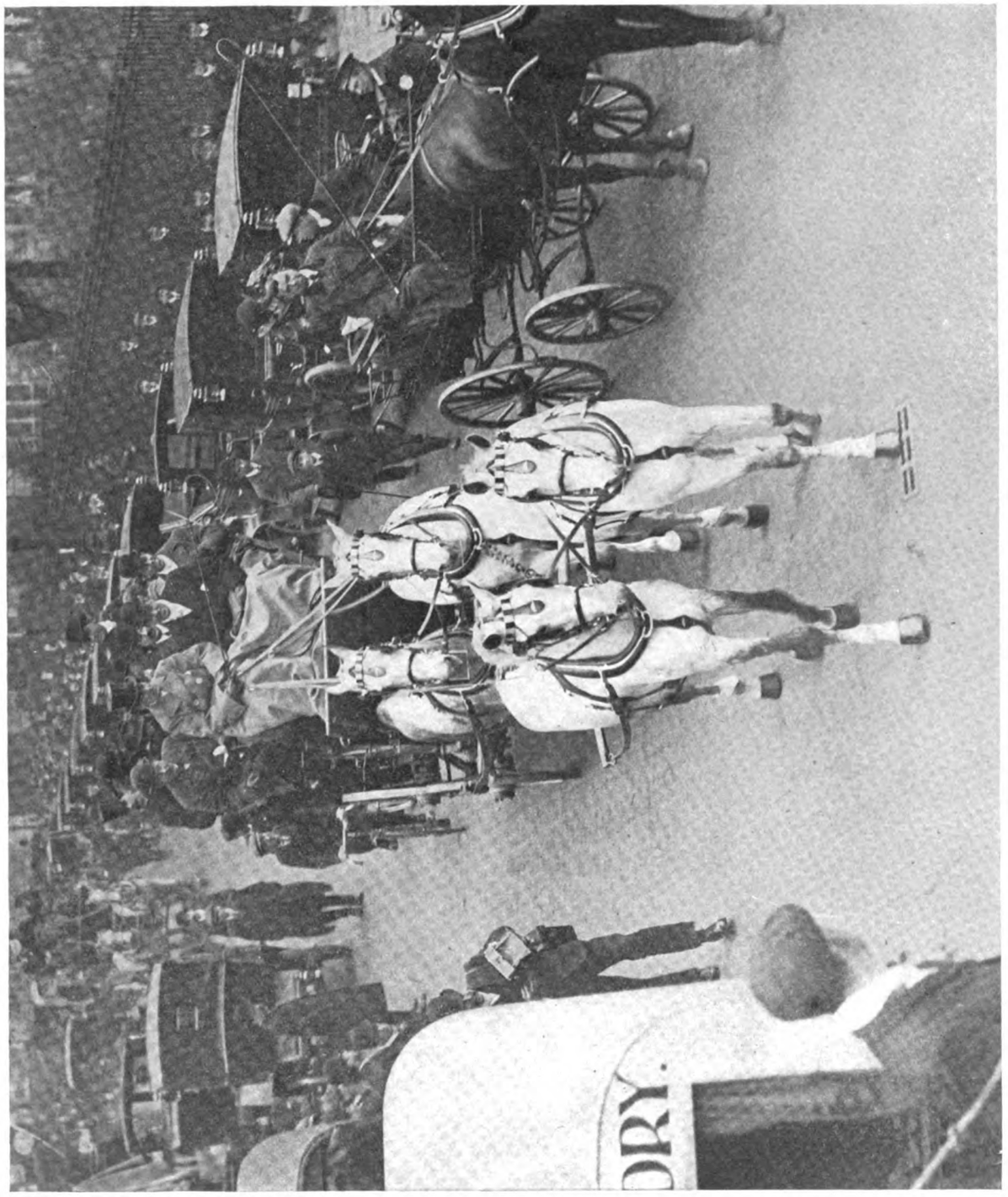


MODERN WHOLESALE ICE TRUCK.



POPULAR BREWERY TRUCK.

Digitized by Google



A. G. VANDERBILT'S FAMOUS GRAYS AND COACH AT HYDE PARK.
—Courtesy Rider and Driver.

Digitized by Google

Wood-working and Smithing

PRACTICAL FEATURES IN DESIGNING COACH UNDERCARRIAGES.

Undercarriages have undergone many changes in their construction around the centre pivot of the perch bolt, and the fifth wheel plate as a platform basis. There are some designs of undercarriages, which seem in their entirety, to have reached

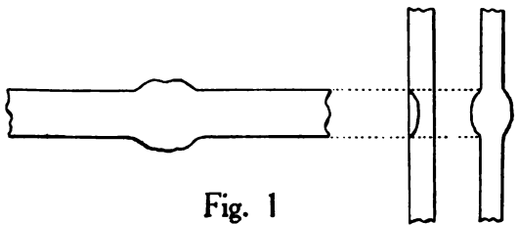


Fig. 1

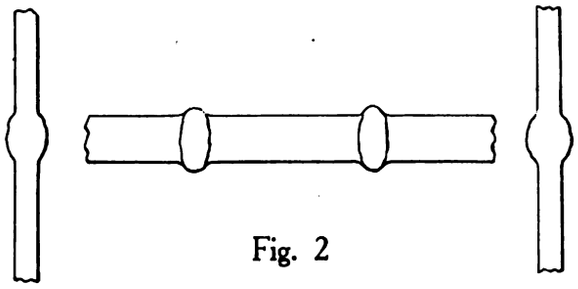


Fig. 2

a point of perfection beyond which it would be difficult to travel.

Still there are weaknesses in the construction of these fine pieces of work that one would think would have been corrected, to balance with their artistic design. But in these things there are hidden weaknesses, which are like hidden treasures, most difficult to locate. Hence, improvements which seem to show perfection are so frequently associated with defects, which take years of experience to thoroughly discover and remedy without detracting from the good points of an underworks conspicuous for its correct proportion and artistic design.

For many years the framed top carriage, with double and single puncheons, have held the sway without their being challenged to improvement. The bottom carriage is invariably made with iron futchells, which are forged into the bottom bed plate, and is a great improvement upon the heavy bed, into which wood futchells were framed through. Though, of course, in the heavier built undercarriages, wood futchels are still used because of their massiveness in giving proportion to the bodies they are made for—such as family breaks, or four-in-hand driving carriages, with underworks, without a perch. In these underworks the top carriages are also made with single or double wood puncheons to harmonize with the futchel framing of the bottom carriage.

It is to show improvements upon this design of undercarriage in its top half that this article is written, and the drawings made to illustrate. As the forging of iron futchels into the bottom bed plate of these underworks has proved to be so effective in strengthening the structure and adding a grace to it, it is sought here to still further enhance this effectiveness by forging the plating of the top carriage center bed to bring about the same advantages as those achieved in forging the bottom bed plate and futchells in one.

In an undercarriage framed up with wooden futchels, wear and tear, coupled with an insufficient plating, brings about a weakness of the futchels at the back of the bed, which in time yield, and ultimately break across, though this defect could be avoided by the futchel's proper plating, but quite irrespective of the bed plating.

In a top carriage framed with a single puncheon it is no uncommon thing to find it broken off at its shoulder at back of bed. There is really no strength in the puncheon itself, for it is merely a means of connecting the bed and cross bar together, while its framing tongue piece projected in front on to the fifth wheel plate, fills up the space, and admits of the center stay being nicely heel-bossed and carried up to the footboard to which its foot is bolted.

To commence, the puncheon is nearly cut in two by the king bolt hole, and squaring for the neck of the bolt, so that a strengthening support is not to be expected from it. It's a graceful line of connection only and to further explain its want of strength, if the hind end projects two inches beyond the back of fifth wheel plate to take the cross bar, it will be in some cases experienced, that the resistance of the cross bar to the upward pressure of the back fifth wheel, which is forced against the fifth wheel plate in the draught of the front wheels, will cause the crossbar to spring, and thus lift the puncheon at its shoulder against the bed and cause it to break there. Though this is mostly the case where the timber is of a light nature instead of out of a hard and tough part of a plank, as it and all the wood parts of an undergearing should be.

But this weakness is not so liable to happen if the crossbar is fixed to the puncheon directly over the fifth wheel, because the wheel plate will help the cross-bar to maintain its position without springing, while to strengthen this rigidity, the bar is plated edgeways instead of flat, by which the pressure weight is met by the depth of the plate, instead of its thickness, and is

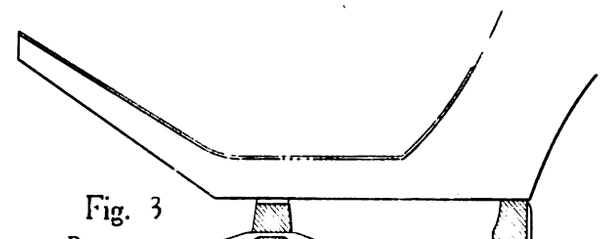


Fig. 3

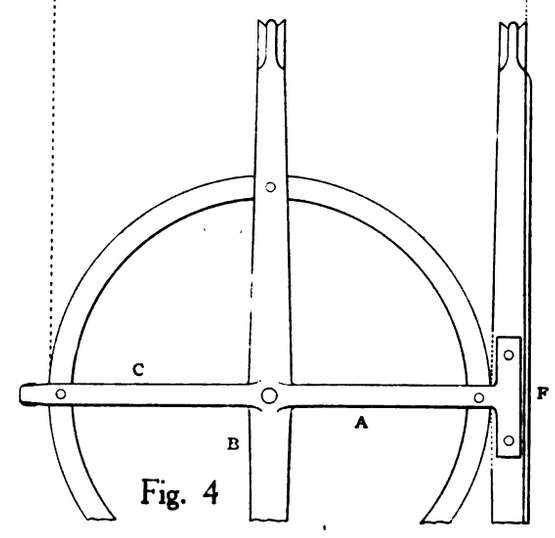


Fig. 4

Digitized by Google

an important matter for consideration in the plating of undergearing and bodies of every design and grade.

The method by which the constructional strength of a top carriage can be improved, is to plate it with the puncheons forged into the top plate of the bed, making the forgings to take the place of the single or double puncheons, as the case may be, if they were of wood. The diagrams, Fig. 1 and Fig. 2, are shown forgings of single and double puncheons ready for welding into the top plate. Fig. 1 shows a center section of top bed plate, and puncheon piece scarfed, as they would be before being welded together by the smith and worked up and finished as shown in Fig. 4 by letters A, B, C, and curved to position in side elevation as in Fig. 3 at D and E. This makes a first class job, for the king bolt hole can be drilled and side slotted, which is much better than fully squaring the hole out, without causing any weakness. The hole through the bed will be only that of the bolt's diameter, 5/8 in., so that while the bed is strengthened at the king bolt hole, it is equally strengthened by the puncheon not being framed through it but worked over from the top of the plate, to the wheel plate in front, and in the same way behind.

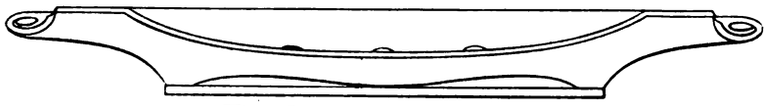


Fig. 5

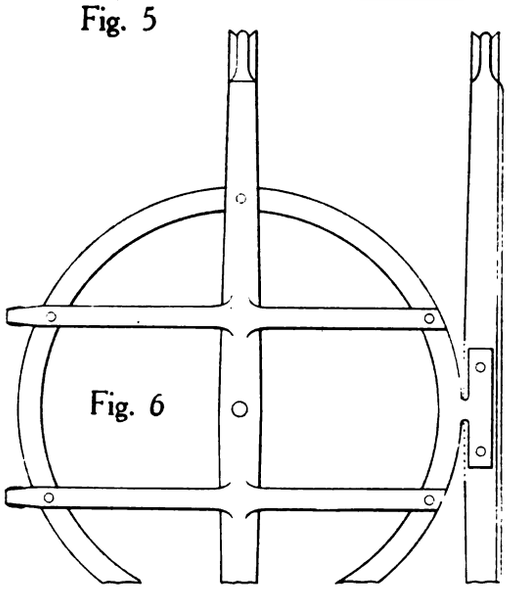


Fig. 6

Fig. 2 shows the center section of top bed plate scarfed, for the forging of a double puncheon top carriage. The cross-bars are also shown scarfed for the smith to weld together and finish up, as in the diagram Fig. 6, and curved to position as in Fig. 3. Fig. 5 shows the top bed and the line of the top plate to which the puncheons are welded.

It will easily be seen that forgings of this kind are a rapid stride in advance of what obtains in top carriage work at present. such a method of top carriage construction leaves the bed unfettered in the matter of substance, because there is no framing to be allowed for, consequently the thickness of the bed can be reduced to a finer proportion if desired.

In the forging, Fig. 4, the foot, which takes the rear cross-bar at F, is forged on the puncheon A, the cross-bar being fitted to it with two bolts as shown, while the cross bar itself is plated edgeways on the back, and fixed to the bar with screws. But the forging in Fig. 6 shows the cross-bar foot-stay forged into the fifth wheel plate, and the puncheon hind ends finished in line with it. They can, of course, be made to project beyond the plate as shown in front, and finished in the usual way.

In making light undercarriages in which iron predominates, they should be forged from the very best brands of iron on the market because good iron, like good timber, is the cheapest for a body or carriage maker, can work with better results both in time and workmanship, while a smith can make his welds with confidence that the metal will be safely cohesive in the connections, providing the welding point is at full bloom, and the scraf free from dirt or other foreign matter.

Some builders have used mild steel for undercarriage forgings, but this is a mistake, because an underworks is so subject to quick twists and sudden wrenches that steel is unsuited to meet these liabilities and prone to snap in these emergencies which are in the list of every day's work. Moreover, steel is a quick conductor of vibration and sound, while it offers in this work no better advantages than is obtainable from using the best iron, which a smith can use with far greater safety in forging than he can with mild steel.

PULL TOGETHER.

It is this "pull together" spirit that is building up the small towns all over the country; and anything that builds up a town builds up every merchant in that town.

It is the "pull together" spirit that is bringing more trade to these small towns, that is bringing people from longer distances, and that is virtually killing mail order competition. And when these things are accomplished, while no one merchant can expect to derive all the benefits, yet every live and aggressive dealers in the town is bound to get his share.

Yes, let this grand, good, brotherly "pull together" work go o namong merchants. And instead of the merchants of a town going on the "war-path" with each other, and bending their energy toward downing the other fellow, with the result that legitimate living profits to all concerned are sacrificed, give up trying to kill your neighbors and all work harmoniously together for the general good of the town, and see if you can not extend the limit of your trade territory just a little farther out so that you will all receive a substantial increase of trade.

PARIS CRIES FOR MORE HORSES.

While New York and London are talking about the displacement of horses through the growing use of electricity and of automobiles the number of horses used in Paris grows at a rapid rate.—N. Y. World.

Digitized by Google

WELDING UP CHANNEL TIRES.

The invention of the india rubber tire and its fixing to wheels marks an important advance in comfort and draught in carriage manufacture.

In England the earliest practical solution of the problem of using india rubber as a tire on carriages as a substitute for iron was by Mullinar, of London, Liverpool and Northampton, who exhibited a brougham at one of the London exhibitions with the wheels shod with these tires, which were fixed on with outside wiring; but owing to this inartistic method of fitting the

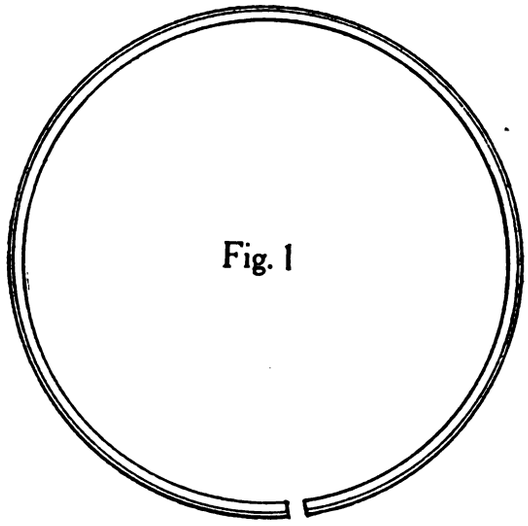


Fig. 1

tire fell into abeyance until the invention of the channel tire to take the india rubber, which solved the problem and gave the tire a wide use, as it has to-day throughout the world.

Wheels as supplied ready-shod with india rubber by special makers have set up a special tiring for smiths to grapple with, far away from that of tiring with iron or steel bar.

This is so much so that patents have been taken out by one firm after another for methods of performing this operation. Some of these have special fires and other apparatus for the carrying out of the work.

But, with all deference to those enthusiasts for specialization, it has ultimately fallen to the lot of the ordinary carriage tire



Fig. 2

smith to solve the possibility of bending steel channel tires, and welding them up, without appealing to any of the patented methods for doing so.

Mr. Pearce, of the firm of Hale and Pearce, carriage builders, Southampton, England, who is a practical coachsmith, has worked out a method after much experimental effort and study that entirely dispenses with any extraneous assistance in the way of patented specialization.

The method employed is simply the fire and anvil of every day smith's work. On the channel tire, Fig. 1, being bent to the

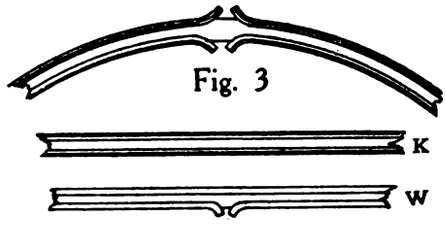


Fig. 3

circumference required; the ends are jumped up for scarfing, the lengths being allowed for welding up to size of wheel by the traveler. The ends of the tire are split as per Fig. 2, which shows the center lip, and the lugs on each side are the channel sides of the tire, split and turned back to allow of the center lip being shut together to the tire's length.

In shutting these tires of mild steel, it is most essential to use a proper flux to anneal the carbon, and thus bring the steel to a fusible cohesion in its malleability under the hammer. A French welding compound is used for this work, as at A, Fig. 2. This flux is slipped in between the scarfs, and a welding heat taken and shut up as is shown in Fig. 3.

In welding up the channel lug scarfs, they are turned down and the compound flux inserted between the scarfs, and shut

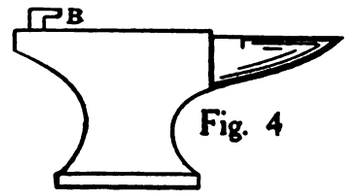


Fig. 4

up one at a time, as at W, Fig. 3, and worked up on an edge tool to form the channel in the shut, as at B on the anvil, Fig. 4. This being completed, the other side of the channel is shut up in the same way and finished off as at K, Fig. 3.

The tires are contracted and put on by heat expansion, as an ordinary iron or steel tire is done, but of course great care is necessary in preserving the channels in putting on.

It will be seen that the method employed is within the experience of every day coachsmithing in its simplicity, and will therefore be of practical interest to the smith readers and subscribers to The Hub.

CHRISTMAS MEETING OF CINCINNATI CARRIAGE MAKERS' CLUB.

The annual gathering for the Christmas festival dinner of the Cincinnati Carriage Makers' Club was held at the Business Men's Club, in Cincinnati, Ohio, December 17th. There were present, including members and guests, one hundred and seven, and three members of the press. After a very nicely prepared and served menu was partaken of, President Armleder called the meeting to order. The report of the previous meeting was read and accepted. R. C. Webster and D. C. Williams were received as members of the club.

George S. Brown called attention to the death of C. C. Wick, for many years an active and of late years an honorary member of the club. The chairman appointed a committee of three to prepare a resolution to be presented at the January meeting of the club, and the secretary was instructed to send a floral tribute.

No reports of the standing committees were called for, but were deferred to the next monthly meeting.

The entertainment committee provided quite a variety in a splendid programme carried out. Rev. Dudley Rhodes delivered a very interesting, pleasing and complimentary address, taking in the various phases of human life from childhood to old age in such a way as to impress all present, and the address was well received.

In the absence of Mr. Bettinger, of the Ohio Valley Improvement Association, who could not be present, Harry Probasco made a very fine substitute in the excellent and instructive address he gave on the importance of the improvement of the waterways of the country. One illustration showed that the building of a canal from Cincinnati to Toledo, a distance of some two hundred and forty-five miles, fifteen feet deep, in its transportation facilities, would be equivalent to all the moving of freight which could be done by fifteen double track railroads. This, with other illustrations, proved that this great work must be carried on with still greater energy to its final completion.

Horace G. Williamson, Miss Sadie Sherman, W. S. Ransom and the Free Setter's Quartette contributed to the evening's entertainment. The meeting closed with the singing of "Auld Lang Syne."

Digitized by Google

THE DELIGHTS OF VARNISH.

One never enjoys anything without its contrast.

Even the antidote to poison can't have any real gustatory relish unless the poison itself has had an introduction to the palate.

If you want to know what a truly devilish compound varnish is, look up the trade journals for the past hundred years, or the full library of books by that prolific author, Practical Painter.

If you would look at the silver side of this gummy shield, you are driven to listen to the siren-song of the varnish salesman, but you at once class him as attorney of record for the defendant.

You feel so sure that his good words are paid for that you are inclined to keep tabs on his eloquence by means of a bell-punch, just to learn from motives of low-down curiosity how much the job is paying him.

There is not a living painter who could pay his rent were it not for the so-called "deviltries" of varnish.

Why is brother painter so highly esteemed by his boss, and his wisdom catalogued as of the same brand as that Solomon used as collateral?

Because he is reputed to have such skill that he can stand on the home plate, like Cassabianca on the burning deck, facing twisters, in-curves, and all the other devious tricks that varnish pitches at him, and take them hot off the bat smiling, with never a strike called on him.

Think that is a deviltry of varnish? Not much! That painter would be forlorn to the verge of suicide if he failed to find just what he was looking for.

It is just that concatenation of evils that makes the compound a joy forever.

And just think of it! Where would be that growth of sturdy manhood that holds the painter aloof from the cup of oblivion, and makes him a graven image of the good Father Matthew, were it not for the exercise the moral muscle derives from looking for the expected in varnish, finding it, and brilliantly overcoming it, without individually "crawling," "blistering," "sweating," "deading," or "sinking away?"

Say there is no joy in varnish? Go to!

Varnish is likewise a promoter of the maternal instinct in man—a state of mind which has been heretofore monopolized by lovely woman. Nothing finer than such an instinct, because there can be nothing finer than glorious womanhood.

And yet varnish can do this while uninformed writers talk about its deviltry! Permit us blandly to inquire if it is not tender solicitude, inspired by the seraphic qualities of varnish that prompts the kindly painter to "keep chilled varnish in a warm room?" Could he do more for the infant at his—ahem! breast?

If varnish were what calumniators shout would the painter shield it from "that long exposure to cold weather" that converts its beauty spots into "specks?"

And why does he "keep it near a steam pipe or stove for some time" if not because his heart yearns for its chilled condition as the other kind of hart panteth for the brook?

And the foolish writer can write of the compound that evokes this moral exaltation on the part of the painter as deviltry! Certainly it is all wrong. Varnish is a pure delight, yea, 99-100 pure.

In this matter of varnish it is about time truth, heavenly maid, comes up from the bottom of the well. Deception is not only wrong, it is worse, it is unprofitable. Delilah found that out when she fumbled Samson's head with the clippers, and that strong, good man, like varnish, displayed a tendency to "brittleness" thereat, especially as to the pillars of the temple.

There is no truth in the alleged vagaries of varnish. It is a true friend, full of sweetness and light. What faults it has, if any, are the faults of yesterday. They happen the night before. And what mere man is not grateful for forgiveness of the acts of the night before!

Therefore we forgive varnish any little indiscretion, and the act of so doing induces soulful exaltation in the forgiver. He feels as good as the superior (?) person who forgives the bad little boy.

And isn't that a delight? Most assuredly it is. Therefore varnish is a moral force for good that you can procure by the quart. It is canned content—"that's all."

Who has ever reported the exordium of the painter when he has done a particular fine job, or evoked the beauty of the material to its utmost? No one has. The painter himself on such occasions is too full for utterance—that is, full of thank-offerings, not that other implication of the groveling mind. The varnish has been responsible for all kinds of joy, yea, 57 varieties of it. But the painter does not seat himself at his inlaid writing table and pen his grateful thoughts to the varnish maker. Oh, no! And that is why its praise is never sounded in books, only its so-called deviltry.

But let the varnish awake feeling—well, not so very good some morning—and complain that its "under coat does not feel thoroughly dry" that day, or that its thoughts are somewhat "foggy," and, in short, that it feels so utterly miserable after a bad night that it is "turning white." Then, oh! yes, then we hear all about it.

Think of a doctor lampooning a patient behind his bed because his tongue was a mahogany brown, when it is precisely these conditions that give either the doctor or the painter a chance to be on earth. Why, it is positively beneficent in varnish to have these intelligent moods. They inculcate patience, resignation, a yearning for the spirit, and after attaining the spirit there supervenes Nirvanna, or the delights of forgetfulness. What could one ask of varnish finer than that?

Its moods are levers that up-lift to the higher life. Some can't get too "high" when they think about it.

No! Let us hear no more of this silly prattle of the deviltries of varnish. Rather get thee to a high place, higher the better, and chant its praises as the soul of brilliancy, the precious oil of enduring elasticity, the myrrh (or any other kind of gum, including Tutti Frutti) of sweet incense, and the painter's joy forever! Like unto man and his liver, he can't live without it.

Then, fill up!

Here's to the Delights of Varnish, with her "pale, durable body!"

Drink hearty!

"A BIT OF BLOOD."

The Ledoux Carriage Co., of Montreal, Canada, has sent to its many friends its annual calendar, a custom in vogue by this house for many years. The calendar includes a highly colored lithograph, 13½ x 20½, depicting a road scene, in front of a wayside inn in the village, where an owner of a high-bred horse stops with his gig to secure a drink. The owner is extolling to a friend on horseback, whom he meets at the inn, the many good points of the animal before him, while the innkeeper, his wife and the hostler stand by deeply absorbed in the conversation. The whole represents a scene of some quaint village, with antique style of architecture, and the title of the picture is "A Bit of Blood."

WHEREABOUTS OF THOMAS BROWER WANTED.

A western carriage manufacturing concern desires to get in communication with Thomas Brower, a young man now about twenty-five years of age, who was a carriage painter and expert rubber, and formerly resided in Owensboro, Ky. If he or any of his friends will make his whereabouts known, we shall be pleased to inform our subscribers.

Digitized by Google

PAINTING AND UPHOLSTERING

GOLDEN AGE OF VARNISH.

Varnish may be said to have reached its golden age—its age of finest quality and supreme virtue—when, after having been confined in the ageing tank by the maker and finally received by the painter and shelved for a time sufficient to settle it out and give it the proper degree of mellowness, it goes upon the surface rich in the elemental properties that make it at once the most delicate and the most indispensable article used in the economy of vehicle painting.

That a great quantity of varnish finds consumption in the vehicle paint shop which in no mentionable degree measures up to the above specifications goes without saying, and this fact contributes directly and substantially to the inferior results credited in all quarters of the country to the carriage and wagon painter.

Varnish should not be used—indeed, need not be used—until it approximates a fairly perfect article, if such a thing be possible, even in the advanced science of varnish making.

The golden age of varnish, if we rightly understand it, is an age in its life before use when, like the butter from Orange County, it is "prime"—that is to say, of proper age and uniformly balanced throughout. In the matter of giving it age as well as in the science of imparting to the varnish all those qualities and functions vitally essential to its composition, the varnish maker is, of course, responsible. For all of these things together with the cost of the raw material, the manufacturer is duly and, we may be sure, fairly rewarded.

After reception of the varnish by the painter, the golden age of the precious material is affected for good or ill, for better or for worse, by the method of curing, housing and handling it practiced by the user or craftsman in charge of it. If he places it in storage, as he avowedly should, upon shelf room half way or more between floor and ceiling in an apartment heated, when heat is required, to a standard temperature of 70 degrees Fahr. and is used directly from such shelves without chilling, shaking or mixing it, he should, other things being equal, be quite able to get satisfactory results.

It is scarcely necessary here to state that the most superb varnish—the varnish not only of the golden age, but of the priceless virtues—may, after having been groomed and fitted for the surface with consummate skill, be utterly ruined by rough usage neglect of necessary precautions, or by mixing with another varnish. Varnish should not, like the unpalatable medicine, be shaken before use. There is sufficient temper in varnish to "stir it up"—make it cantakerous, in fact—if gripped with two strong hands and shaken vigorously, as some painters have a habit of doing.

And the mixing of varnish has been denounced by the most competent authorities—the varnish makers. It is a practice opposed to the chemical and scientific principles involved in the manufacture of varnish, and it introduces an element of uncertainty into the product with which, in this age of competition, no self-respecting painter can afford to deal.

If varnish has reached its golden age, then, verily, after all the care and coddling lavished upon it, the surroundings in which it is flowed upon the surface should be of a character to assist directly in giving it a clean body and an unchallenged lustre.

At best, the varnish room is hardly on a par with the character of the varnish used within it. Readers of this article may travel far and wide without finding an adequately suitable varnish room—one in which all the conditions are perfected. Ventilation and light and cleanliness and heat are far too often neglected and obsolete factors, whereas the very opposite of all these should prevail, and in good truth must prevail, if the golden age of varnish would be respected and its highest development made secure.

Certainly the varnish maker has played well his part in the drama of varnish evolution, and the wonderfully fashioned material speaks eloquently of his attainments. It remains for the painter to play his part equally well, securing so far as possible those conditions of greatest advantage to the development of varnish. Thus will its golden age prove an imperishable age.

MODEL VEHICLE PAINT SHOPS.

Model paint shops are fewer in number and more widely distributed by virtue of the disinclination of painters themselves to improve the surroundings in which they work, and to advertise "running a shop" as an acknowledged business enterprise So long as back alleys serve as streets upon which to locate the paint shops and unventilated garrets as the chosen quarters for sheltering painting activities, so long will the model paint shop continue to remain a figment of the imagination.

The country carriage painter is said to be extinct, so from that source improvement is a matter of ancient history. In the larger towns and cities, however, we have a right to expect improvement in shop conditions over those formerly in evidence.

Surely, the painting business is entitled to cleaner, lighter more wholesome and better ventilated quarters and surroundings. Location is one of the aids to the acquirement of the model shop Publicity is another. The painter's ambition to maintain a standing in the community as a business man is not the least of all.

And then the shop itself. While the painter, in common with other artisans and men of affairs, is a creature of circumstances and is hedged about with limitations, it is possible for him to improve and give an "uplift" view to the most ill-adapted shop.

The model shop, or perhaps we should say the shop copied after the model shop, may reasonably be viewed in this wise:

Ceilings in the various rooms fairly high for the command of greater breathing space and fuller light, windows large and in plentiful numbers, doors of sufficient size to meet all possible requirements, water facilities modern and piped to all working rooms to promote economy, ventilation practical and efficient.

Rooms in which general painting operations are carried on, together with the gear finishing room to be, preferably, of matched siding, finished in the natural wood, to permit washing and other cleaning, with a solid hardwood floor.

The body finishing room to be located, if possible, to command a north and east light and exposure. Walls and ceiling finished in hard plaster, or with matched pine, natural wood finished—the plaster finish, if hard and right, to be preferred. Window spaces plenty, to be outfitted with roller curtains for use when needed. Varnish room to be as nearly air-tight as the ingenuity of the carpenter can make it. Aside from the revolving body trestles, room to be absolutely devoid of all furnishings.

Steam coils encased in a sheet-iron cylinder or drum, to furnish indirect radiation. Other heating systems secondary choice. Hot air through radiating pipes to be desired before stove heat, the latter being the least satisfactory of all.

Ventilation to be secured through an exhaust flue in the ceiling, also through ventilators over the windows, the inner outlet to four or five sheets of cheese cloth spaced, say, three-quarters of an inch apart.

The model shop should have plenty labor-saving devices, and lastly, a model manager.

If not the latter, why not?

Digitized by Google

DESIGN FOR UPHOLSTERING AN ARGYLE MOTOR LIMOUSINE BODY.

It is much easier to elaborate the interior upholstery of a motor carriage than it is to fashion new lines of form in exterior design.

In carriage trimming the trimmer has before him excellent data from which he can draw inspiration in laying out the upholstery of a motor, for before the new vehicle came into use as a competitor with horse carriages, carriage upholstery had reached a high state of luxurious finish and design, both in Europe and America, so that the trimming of a motor upon altered lines and new formations in the surfaces was not so difficult as the creation of new designs in the bodies, which have had such a telling effect in bringing the motor carriage to the front.

A smartly designed motor bespeaks a luxuriously upholstered interior—at least that is the effect that would influence the motorist in general. Smart design, beautiful painting, and rich art in the interior trimming are the high-water marks of successful motor carriage manufacture.

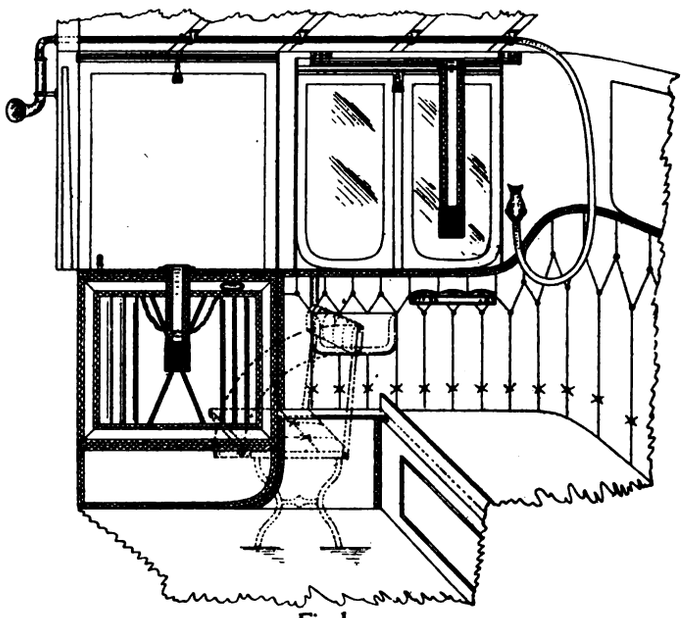


Fig. 1

The Argyle Limousine is strikingly individual in its design, the lines being rich and quick in their life-giving impression; so that an effective style of upholstery is imperative to harmonize with its exterior excellencies.

Unlike the universal method of complete interior trimming, the design herewith only shows the squabbing off by the elbow line of the body, and back cross rail line of the top of the back squab.

The top quarters and roof are finished in polished paneling—or varnished in the natural wood, which makes a rich contrast to the elaborate trimming. The plan of cutting up the interior upholstering in contrast is a right step towards preventing the lodgment of dust in such broad harboring surfaces as is offered by a full trimming. In brushing the upholstery, dust naturally rises and lodges in the top quarter squabbing and roof; but with top quarters and roof finished in polish or varnished in the natural wood dust cannot lodge, while the surfaces can be dry-sponged and chamois leathered off. The roof is fitted with fancy taped webbing, so that umbrellas and walking sticks can be nicely racked out of the way, or fancy brass netting can be used for the same purpose instead of the tape webbing.

Fig. 1 shows the elevation of the inside of body from back to door, and the full design of the trimming. The quarter and a part of the back squabbing are shown perspectively, also the seat locker and floor of body. The design of the squabbing is in column pleats, with diamond borderings, the figureheads being proportionately set off in depth from the door to the first equal line along the top of the back squab. The formation points of the figures are center-buttoned, while the pleat lengths are cut off with an equal belt depth from the seat and center-buttoned.

A pocket is worked into the squab, the tippet of the pocket is in plain cloth, but stiffened with leather or buckram canvas.

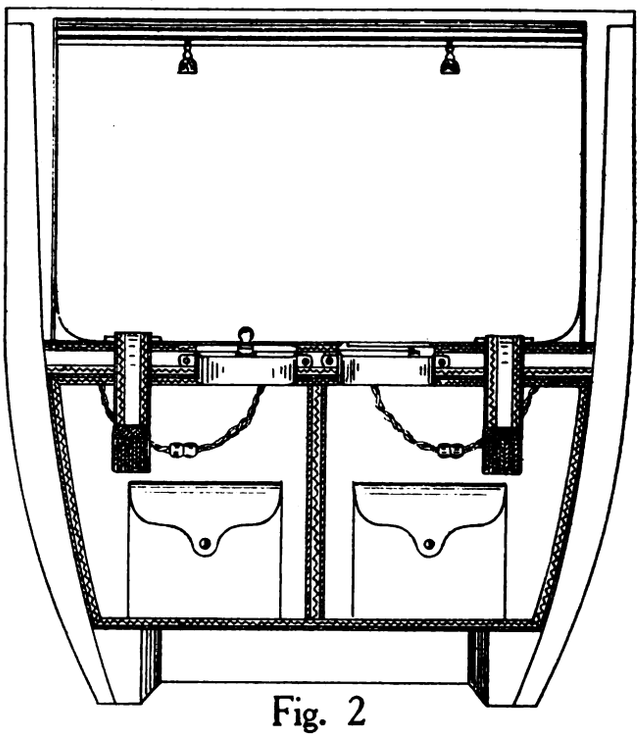


Fig. 2

These pockets are most necessary in a motor carriage trimming, and are made larger than those in horse-drawn carriages. The quarter is also fitted with elbow rest and holder, the latter being firmly secured to a brass rail near the roof over the window quarter. Spring roller blinds are fitted to the winows, while a signal and speaking tube is fitted to the quarter and goes up the standing pillar and along the canopy roof and is fixed to the outside front of the body pillar, as shown in the drawing.

The door squab is made in narrow plain pleats and edged with broad lace. The body of the lace is plain, while the margins

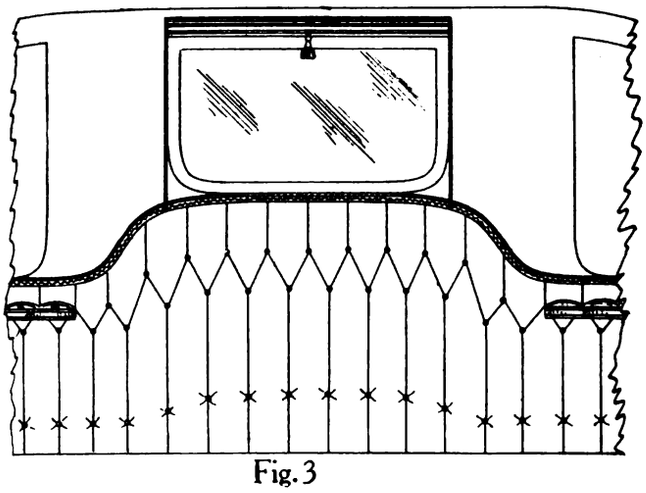


Fig. 3

are figured. The center panel of the squab is plain, but worked up in quarter diamonds to a center button of large size to suit the paneling. The bottom of the door below the squab is finished in plain cloth. The glass string, cords and door pull are finished to match.

These cars seat four on the inside, all facing the chauffeur. The front seats are made to fold up as in Fig. 8. The seat is shown fully open and in position in Fig. 1.

Digitized by Google

Fig. 2 shows the front of the body. The style of the fnishing is in plain paneling and margined with broad lace, while the centers are fitted with plain and proportionately sized pockets to the panels. Cigar and card trays are fitted to the waist rail, glass strings and cords being arranged to harmonize. A full width roller blind is fitted to the window, which goes the whole width of the body.

Fig. 3 shows the full design of the back squab, with elbow rest pieces in position. Lace is fixed round the margin line of

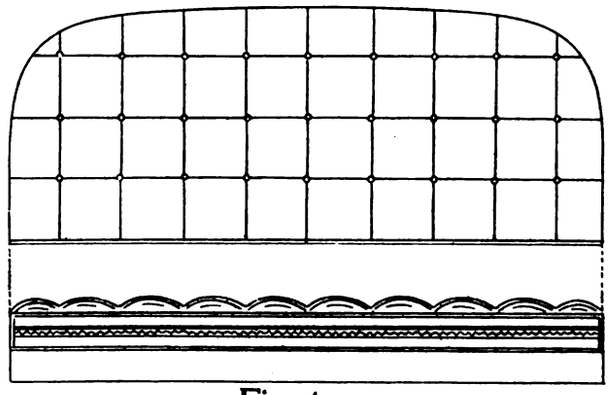


Fig. 4

the back light frame, the light being also fitted with a spring-roller blind.

Fig. 4 shows the design of back cushion, which is made plain for about four inches from the edge and then figured in the surface, as shown. The front border of the cushion is also shown in the drawing. These cushions and the back squab are made

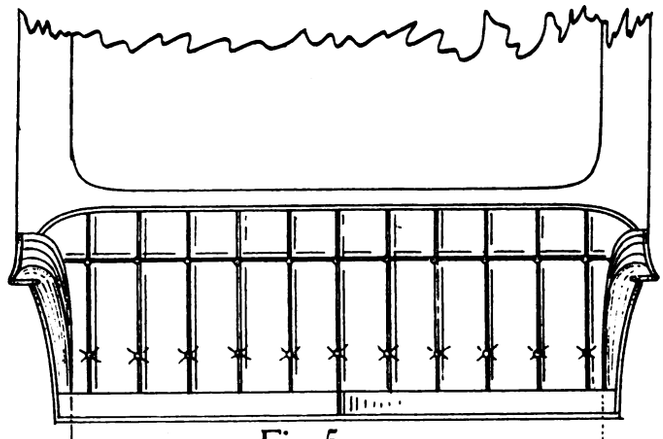


Fig. 5

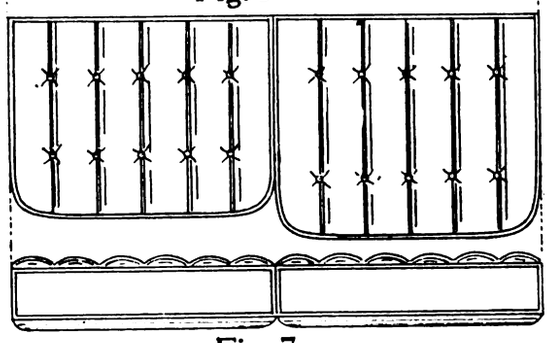


Fig. 7

with bases of coil springs, which are supplied by the makers, and are made in frames to the desired sizes of any body. These potent helps in the ease, comfort of cushions and back squabs are widely used throughout the motor trade now, because it has been experienced that they are the means of giving more lasting comfort to riders than can be got out of hair stuffing where long journeys are the rule, as in the case of motoring.

Fig. 5 shows the front squab of the front seat. It is arranged in pleat paneling and waist-banded off along the top. The angle of the side quarter squabbing is also shown. The bottom of the squab is also waist-banded off and center-buttoned.

Fig. 6 shows the front quarter squab with center pocket. The design is in plain pleats, to match the back squab, and is roll-stuffed along the elbow top.

Fig. 7 shows the style of the front cushions.

It will be seen that the chauffeur's seat is narrower in width than the near cushion. This is necessary because of the space occupied by the gearing levers, on which the chauffeur must have a free hand and as much room as possible, hence in moving

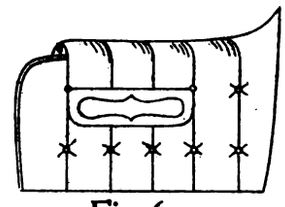


Fig. 6

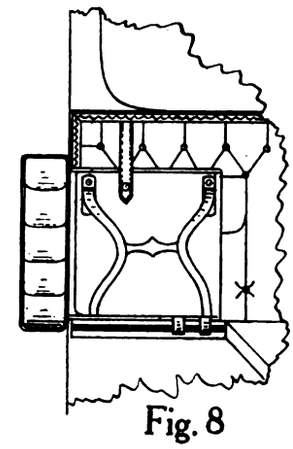


Fig. 8

backward and forward his seat can conveniently be narrowed to suit his needs in driving. These cushions are made to drop into frames, and fitted with base springs, in the same way as the inside back cushion and squab are done.

The material of which this upholstery is made is of dark drab, of very rich texture, and the surface finish and the lace to match.

A car of this type needs be well up in every detail of power, design, painting and upholstering finish. Power of engine is of course the first consideration, but design of outline and artistic finish, as well as the effect of luxurious comfort, are the telling points which accentuate rivalry in manufacture, as well as impel the purchasing inclinations of the buyer. The design for a limousine trimming herewith will, we doubt not, be found of practical and artistic value by the subscribers to The Hub whose line of work lie in this direction.

WOULD TAX FUEL TO BUILD GOOD ROADS.

A novel and interesting suggestion was made at a recent conference of the Scottish Chamber of Agriculture, when a discussion was on foot as to the best manner of raising funds for road maintenance, says the Field. The taxation of motor cars is the usual plan brought forward, but on this occasioin it was pointed out that a duty on petrol would be more equitable in raising funds for road improvement. A tax on motor spirit would affect each user in the ratio that he used the road, generally speaking.

A GOOD SUPERINTENDENT.

From time to time some excellent openings presents themselves in many of the large manufacturing institutions of the country. Good practical men are always in demand, and live manufacturers are usually willing to pay a liberal price for their services. One of the large eastern carriage builders is seeking a good superintendent this month. They prefer a man with experience in automobile body construction and a knowledge of fitting same to chassis. Turn to "Want" column for further particulars.

Digitized by Google

INDIANA VEHICLE NOTES.

Indianapolis, Ind.

While the 1908 trade was far from satisfactory for vehicle dealers and manufacturers, better conditions are looked for this year. Manufacturers report that advance orders are at least thirty per cent. larger than they were this time a year ago, and that their output during 1909 will be correspondingly larger than it was during 1908. There seems to be a general movement among carriage manufacturers in the State to enter the motor buggy business, as seventeen Indiana concerns have decided to engage in that business this season.

Much interest is being shown in the proposed National Tariff Conference which is to be held here. It has been decided to postpone the date to February 16, 17 and 18, and it is expected that about 5,000 delegates from all parts of the country will attend. It is probable the creation of a national tariff commission will be urged. D. M. Parry, of the Parry Manufacturing Company, has been appointed a member of the invitation committee.

Harmon & Hall have decided to look after their Studebaker business without special assistance in the future. John Primrose, who has looked after the Studebaker department of their business, resigned recently to go into other business, and his place will not be filled.

The Anderson Carriage Company, of Anderson, is now employing 175 men and is working full time. The company has purchased twelve building lots in order to help in the effort to attract new industries to the city.

A reorganization of the Indiana Carriage Company, 27-33 North Capital avenue, has been effected and the name changed to the Indiana Carriage and Automobile Co. The new company has incorporated with $50,000 capital, F. N. Martindale, S. E. Wilson and Frank R. Barnard being the principal stockholders.

A complaint was filed in the Federal Court here recently asking that the well known vehicle and hardware concern, Seiwell and Yeomans, of Otterbein, be declared bankrupt. The complaint was signed by the Harper Buggy Co., of Columbia City, and the H. T. Conde Company and Van Camp Hardware Co., of this city.

There has been a movement on foot here for some time to hold a world's fair in this city in 1911, the Commercial Club being back of the project. H. T. Conde, president of the H. T. Conde Company, is a member of the Indianapolis World's Fair Committee appointed by the club.

It is reported that an order has been placed with the Studebaker Brothers Manufacturing Co., of South Bend, for $40,000 worth of wagons and other vehicle for the use of the United States transportation depot at Jeffersonville, Ind.

The Cole Carriage Co., of this city, makes its debut this season as the manufacturer of a high-wheeled, solid tired automobile, which will be made in connection with the Cole line of buggies and carriages. The automobile will have a two-cylinder, 16 horse power engine, with the mechanical features built under the hood.

A line of wagons and pleasure vehicles will be manufactured by the Gladys Cart Co., which has been organized and incorporated at College Corner, with $5,000 capital, which will be increased later. Members of the company are Murray Blake, Charles Stout and George W. Shimer.

The name of the W. H. Kiblinger Company has been changed to the W. H. McIntyre Company. For many years the concern has been manufacturing a line of buggies and carriages at Auburn, and within the last two years has also turned out a very successful motor buggy, which will be manufactured on a more extensive scale than ever by the new management.

At a banquet given in his honor at South Bend a few days ago, J. M. Studebaker, head of the Studebaker Bros. Mfg. Co., was presented with a book of solid gold. The book is of 18-carat gold, and weighs 50 ounces. Inside are pictures of Mr. and Mrs. Studebaker in bas relief, as well as an outline of the big Studebaker plant. Citizens of Mishawaka and South Bend joined in giving the banquet and the book.

It is reported that the Hearsey-Willis Co. is preparing to discontinue its carriage business, engaging exclusively in the automobile business in the future. The business was organized by H. T. Hearsey about sixteen years ago, and until a few years ago was one of the leading carriage concerns in the city. Recently Frank Staley withdrew from the company as vice-president and manager, being succeeded by F. I. Willis, and it is understood a decision has been reached to discontinue the carriage stock.

GOODYEAR TIRES TOOK THE "MUD HEN" ON SEVEN-DAY RUN.

The illustration shown herewith is of the famous Jackson "Mud Hen," which made the remarkable non-stop run from Jackson, Mich., to Bangor, Me., a trip that required seven days.

"The roads were something frightful," said Dr. Charles G. Percival, who with E. P. Blair, of Boston, made the journey. So bad were the roads that it was necessary to do a great deal of night driving in order to keep to schedule. Mr. Percival declares that adjectives fail him, both in quantity and quality, when he attempts any detailed description of the condition of the highways.

But in the 215 hours of continuous driving the Goodyear tires served faultlessly. Being of practically one piece—a thick, end-



less band of soft rubber perfectly united to a small hard rubber base in which the three retaining tires are imbedded—they could not break loose from their fastenings. The cleats imbedded in the tire seat, and fitting into depressions in the tire base, absolutely prevented creeping. And the fact that the tires are securely fastened to a special rim, which is riveted to the base rim, practically making them one piece, dispelled all fear of losing a tire. Besides, there was no danger of punctures.

The Goodyear Tire and Rubber Co., of Akron, Ohio, is proud of the test, and believe it the severest one to which tires have been subjected, except in point of miles traveled. But their tires on New York trucks that have run 7,000 miles are in as good condition as the day they were put on, except for natural wear, so the endurance feature had already been demonstrated to them.

Digitized by Google

General Topics of Interest to Trade

WAGON MANUFACTURERS' ANNUAL MEET.

Re-Elect Officers and Agree that an Advance of Ten per cent. Will Have to Take Place.

The annual meeting of the National Wagon Manufacturers' Association was held at its conference room in Chicago on December 14, there being a large attendance.

The reports submitted by the officers showed the organization to be in very healthy condition. The following officers were re-elected: President, Richard Carpenter; first vice-president, B. M. Blount; second vice-president, H. F. Fellows; chairman executive committee, H. M. Kinney; treasurer, W. Schuttler; secretary, E. W. McCullough.

The Official Wagon Warranty, adopted jointly with the National Dealers' Federation and now in general use, received attention, and the manufacturers were urged to see that all their trade be supplied with them.

A most interesting report was made by the Material Bureau of the association, whose duty it is to attend to the needs of members, particularly to woodstock and the standardization of material sizes. The question of abandoning the use of the bent wood front hound and the substitution of the square hound or bent steel hound was considered.

The association recommended that co-operation be given all other industrial associations in placing the matter of remittances on a par basis, or rather that bills should be paid in par funds. This action was found necessary owing to the action of the banks during the past few years in making new rulings as to charges on remittances in other than par funds, which imposed upon the manufacturer and jobber, who received such remittances expense that was large in the aggregate—a charge that justly belonged to the remitter to pay.

The relation of investment and manufacturing costs to present profits was one of the most important subjects brought before the association. Discussion developed the fact that profits in almost all manufactured lines, particularly implements and vehicles, have steadily declined, this being particularly true of farm wagons, the one main item of which, wagon woodstock, has advanced so rapidly as to overcome all fluctuations of iron, steel or other materials, and has pushed costs ahead of any advance in selling prices which has been made.

It was claimed that with the passing of abnormal demand for wagons and in returning to normal conditions, the increased overhead expense and other items which affect profit had been most keenly realized, so that an immediate readjustment seems imperative.

Wagon manufacturing, it was argued, requires the employment of more capital in proportion to the volume of business done than any other line consumed by the farmer, and for several years the increasing cost of hardwoods has compelled a still further addition, so that present returns from profits are far from being satisfactory and the manufacturer has no alternative except to advance his prices if he would continue to serve the trade satisfactorily.

It was the expressed opinion of those present that an advance of ten per cent. over present selling prices would have to be made not later than May 1st, 1909.

The manufacturers expressed appreciation of the efforts of the dealers' organizations in bringing home to their members the correct figuring of costs and profits and are in full and hearty sympathy with the work being done, which is only to claim a fair measure of reward for the services performed

The association appointed a committee to act with the National Conservation Commission at Washington; also accepted membership in the Conservation League of America.

WISCONSIN RETAIL IMPLEMENT AND VEHICLE DEALERS' ASSOCIATION CONVENTION.

Old officers of the Wisconsin Retail Implement and Vehicle Dealers' Association re-elected the old executive officers and selected some new directors on December 10. The officers are:

President, F. H. Sebenthall, Eau Claire.

Vice-President, D. W. Alleby, Mauston.

Secretary, chosen by the board of directors, Charles F. Schraeder, Markesan, who is also treasurer.

Directors, new, F. G. Burchard, South Milwaukee; Lawrence Kraus, Port Washington.

Legislative Committee, F. R. Sebenthall, Eau Claire; Otto Shearer, Palmyra; L. C. Wellensgaard, Berlin; B. C. Wolter, Appleton, and H. Fensenfield, Black Earth.

Finance Committee, Secretary-Treasurer Schraeder, R. L. Nash, Grand Rapids; J. W. Christianson, Berlin; J. S. Cusick, Oregon, and E. F. Williams, Randolph.

MAKES EMPLOYEES PARTNERS.

The Banner Buggy Company, of St. Louis, Mo., has been incorporated with a capital of $700,000. Stock was distributed among a dozen of the employees of the company as Christmas presents by Russell E. Gardner, head of the big concern.

The only change in the business through the incorporation is that Russell E. Gardner will be president of the company instead of sole proprietor. Hugo F. Cartwright is first vice-president. He was formerly sales manger. The employees taken into the business are: Russell H. Cartwright, E. L. Hapke, W. H. Yeldell, Roy L. Wilson, C. O. Nangle, Lee M. Gardner, James M. Aiken, J. L. Birch, George P. Lamy and L. A. Moore, of St. Louis, and W. H. Gardner, of Union City, Tenn.

At a meeting held December 30 E. L. Roninger was elected second vice-president, George P. Lamy, secretary, and A. F. Hapke, treasurer.

EXECUTIVE COMMITTEE OF C. M. A. OF A. MEET.

There was a full attendance at the meeting of the executive committee of the Carriage Manufacturers' Association of America, which was held at the Auditorium Annex on December 15, and over which C. C. Hull presided. There was a lively discussion regarding terms and credits after Secretary Overman read his report. It was suggested that the association appoint a committee to visit the manufacturers who had not joined the organization to urge upon them the necessity of becoming members; also that a committee be appointed to visit the various dealers' associations and federation of dealers and talk with them on the matters in which they were all mutually interested. The recommendation of a ten per cent. increase by the wagon manufacturers was discussed, and while the justice of this advance was acknowledged by individuals, the association took no action. There was a general feeling that the vehicle trade generally was in a deplorable condition and that higher prices must prevail.

Digitized by Google

VERTICAL HOLLOW CHISEL MORTISING MACHINE No. 458.

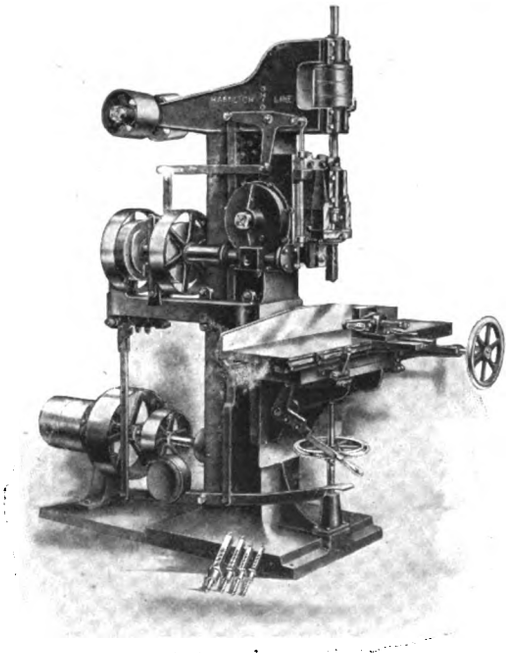
The accompanying illustration is one of a new vertical mortising machine of the latest type and used for general mortising of all kinds. It is a very heavy substantial machine, self-contained in construction, carrying all working parts upon a single frame and provided with heavy base casting for large support on the floor.

The spindle carrying the boring bit is mounted in large, heavy boxes and receives its power from the countershaft on the machine and does not need to be belted from overhead.

The mortising chisel is carried in a sliding housing provided with large sliding surface and receives its power through an improved worm and worm-wheel drive and right and left frictions. These frictions are mounted on the rear and outside of the frame proper where they can be readily adjusted and are belted from the countershaft on the machine. There is ample power in the gearing to drive a mortising chisel 2½ in. in size. Mortising chisels have blades 6 in. in length and the machine is furnished with five chisels and five bits of any size up to 2½ in. square.

The table is of the compound type, can be raised and lowered for thickness of material, has traverse motion by means of rack and pinion feed through the hand wheel shown in front and can be quickly moved forward or back by means of a hand lever controlled by stops for making double or triple mortises. The table is of very heavy construction and provided with a quick-acting eccentric clamp and will take material up to 12 in. in width and will drop sufficiently to take material up to 14 in. in heighth. The chisel will reach to 8½ in. from the center of the chisel to the back of the table.

The working of the chisel is controlled by means of automatic stops which regulate the depth of the mortise, and can



Hamilton Vertical Hollow Chisel Mortiser No. 458.

be controlled by the operator through a foot treadle which engages the downward feed of the friction clutch while the return of the bit to its starting point is automatic. The machine is shown without a boring attachment, but if so ordered the machine will be furnished with a radial boring attachment on the right hand side of the bit which will bore any size hole up to 2½ in., and which can be tipped to an angle of 30 degrees in either direction. It is set permanently in line with the mortising chisels, and will reach the same scope of work as the mortising chisels. The weight of the machine is about 2,800 pounds. Tight and loose pulleys are 12 in. in diameter by 5¼ in. face, and should make 1,000 revolutions per minute. Horse power required is from 7½ to 10.

The above described machine is the latest product of the Bental & Margedant Co., Hamilton, O., manufacturers of the famous Hamilton—Ohio—Line Wood Working Machinery.

NEW SALES MANAGER.

George E. Keller, who for many years was connected with the Parry Manufacturing Co., of Indianapolis, Ind., has been appointed sales manager for the Studebaker Manufacturing Co., of South Bend, Ind.

Mr. Keller goes to his new position with splendid qualifications. He has had over twenty-five years experience in the sale



George E. Keller.

of vehicles, during which time he has been both road salesman and sales manager, and in every instance his record has been one of achievement.

Mr. Keller believes in keeping in close touch with the trade and its requirements, and is well and favorably known among vehicle dealers all over the country. Under his energetic direction the sales organization of the Studebaker Bros. Mfg. Co. will no doubt move forward, if possible, to even greater achievements than in the past.

ILLINOIS DEALERS' CONVENTION.

The Illinois Retail Implement and Vehicle Dealers' Association closed a three days' convention December 11 with the election of officers. In every case the incumbent was re-elected, as follows: W. E. Hall, Jacksonville, president; William Derry, Vermont, vice-president, and John Leuth, Kankakee, and James Earhart, Chrisman, directors.

The board of directors re-elected J. A. Montelius, of Jacksonville, as secretary-treasurer.

REVISED LIST OF QUOTATIONS.

An item of interest to carriage and automobile builders doing business with the Columbus Bolt Works, of Columbus, Ohio, is the revised list of quotations on lag screws and automobile clips, which they have recently adopted. If you possess the 1908 catalogue of this house you should write for these pages and substitute them for old quotations.

Digitized by Google

SPECIAL TRADE NEWS FROM MICHIGAN

Newsy Notes by our Correspondent Concerning Well Known Carriage and Automobile Manufacturers in the Wolverine State.

The Pontiac Wheel Co., of Pontiac, soon will add automobile wheels to its output. A contract has been awarded for the construction of an addition to the plant which will admit the doubling of the present product. The company expects to manufacture 15,000 sets of automobile wheels this season.

The exhibit of the Fuller Buggy Co., of Jackson, made a hit at the auto and corn show recently held in Council Bluffs, Ia. F. L. Holmes, manager of the Jackson Automobile Co., and Howard Matthews, of the Fuller Company, attended the show. There were seventy-seven machines of Mr. Holmes' concern on exhibition. The agent took orders for 100 of the autos, to be delivered before the first of April.

The International Carbureter Co. has filed articles of association in Detroit, giving the capital stock as $100,000, all of which has been paid in through a patent upon a carbureter patented by E. N. Broderick, who holds the greater part of the stock.

The Starter Manufacturing Co. has been incorporated at Lansing, giving its capital stock as $40,000. A factory will be built in Grand Rapids, where the concern will establish its headquarters, to manufacture and sell self-starting and other automobile devices. Those interested in the concern are: W. W. Annable, president, and J. Watson Fitzgerald, secretary-treasurer, holding $15,000 each, with L. J. Clark, vice-president, holding $10,000 worth of stock.

A. J. Petertyl, proprietor of the Traverse City Wagon Works, of Traverse City, reports that he had to put on an extra force of men during the latter part of December, to complete a large number of hurry-up orders for sleighs, some of which were to be sent to the upper peninsula and others to Saginaw and Benzie county. The largest special order was for six pairs of sleighs for the Cummer & Diggins Lumber Co., of Cadillas. They were eight feet six inches long, five feet eight inches wide. They were equipped with a sleigh nose patented by Mr. Petertyl.

A number of Michigan vehicle dealers who received rush orders for sleighs at the last moment in December say that it is almost impossible to keep a large stock on hand, owing to a peculiar condition existing in Michigan—so many different localities use different widths of sleighs.

The big Koenitzer tannery in Saginaw is now practically completed.

One of the most modern and up-to-date power plants in Lansing is being built by the Olds Gas Power Co. for the Olds motor works. The new building will be of red and white brick, one story high and 60 by 100 feet in dimensions. It will be equipped with gas engines and gas producers capable of furnishing 1,200 horse power.

The Olds Motor Works, of Lansing, finally has entered the proposed big merger of the General Motors Co., a $12,500,000 corporation of New Jersey, backed by J. Pierpont Morgan, after it was believed the deal had fallen through. Lansing stockholders have received notice that they may exchange their stock in the Olds Motor Works for stock in the General Motors Co., receiving $4 in preferred and $1 in common stock of the New Jersey corporation for each share of Olds motor stock held; or, in other words, 40 per cent. of preferred and 10 per cent. of common stock in the General Motors Co. for the face of the Olds motor stock. It is reported that the offer was made for 75 per cent. of the Olds Motor Works stock, so that all the stockholders could have the opportunity to exchange on the same basis. The General Motors Co. is reported to be contemplating entering the automobile business on a large scale, realizing the economies possible in business both in the making and in the holding. No transfer of the property or assets of the Olds Motor Works is made. The corporation continues as before, except that it will be under control of the General Motors Co., which has acquired more than three-fourths of the entire stock, and will elect new officers and directors. It is not expected that the transfer of the stock will affect the operation of the Lansing factory.

W. C. Durant, general manager of the Buick Motor Co., asked regarding the report that the Buick concern also would be asked to join the merger, declined to make any statement beyond, "The Buick Co. is still doing business and will continue at the old stand."

Many auto factories in Michigan will have to increase their working forces. In the last twelve months these concerns have increased their staffs of operatives as follows: Cadillac Motor Car Co., 2,000; Packard Co., 1,005; Ford Motor Co., 400.

The superintendent of the Anderson Carriage Co., Detroit, reports that he has taken on at least 200 extra men in the last six months.

The F-I-A-T Automobile Co., makers of the noted Italian cars that have been so successful in many races in America, will soon establish a factory in the United States, and has been considering setting up its plant in Detroit. With that end in view, officers of the company have written from New York to Mayor Thompson asking what inducements Detroit would hold out to secure the factories. The correspondence has been turned over to the board of commerce. The F-I-A-T company says that there is no prospect of the tariff on high-priced cars being reduced, and for that reason it decided to have an American concern. A portion of its equipment will be brought to the United States from Turin, where its huge factories are located. It guarantees to employ 500 men to start and to increase this number to 2,000 within a year.

At a special meeting of the stockholders of the Acme White Lead and Color Works, of Detroit, it was voted to increase the common stock of the company from $1,250,000 to $2,000,000. In 1907 a preferred stock issue of $750,000 was made, so that the present increase makes the total capitalization $2,750,000. The necessity for the large increase of capitalization was brought about by the steady growth of the company along its established lines, as well as to provide funds for the further development of the new white lead corroding department, said to be a remarkable advance over the Dutch method so many years in use. The following officers, who are also directors, were re-elected for the ensuing year: William L. Davies, president; H. K. White, vice-president; Thomas Neal, secretary and general manager; A. F. White, treasurer. The number of directors soon will be increased. It was twenty-four years ago that the officers just mentioned were elected to start the Acme institution with but $10,000 capital.

"We are employing a force of about 1,000 men at present, which is an increase of 40 per cent. since last fall," said C. J. Butler, president of the Morgan & Wright Co., rubber manufacturers. "We shall continue gradually to take on more men

Digitized by Google

until we have about 1,500. We expect to keep the plant going twenty-four hours a day."

The automobile business in Jackson has been productive of encouraging profits during the past year, and a still better trade for the coming year is anticipated by the Jackson Automobile Company.

In referring to the recent increase of the Ford Motor Co.'s increase in capitalization from $1,000,000 to $2,000,000, James Couzens, secretary-treasurer of the company, said: "The fiscal year's ending showed it to be the most prosperous in the history of our concern. In spite of the financial depression more Ford cars were sold during that period than in any previous twelve months, and production fell short nearly 3,000 cars of enough to fill orders. In five years we have built 25,000 cars, and have outgrown our quarters four times."

The employes of the Hayes Manufacturing Co., of Detroit, celebrated the fifth anniversary of the concern's establishment in the City of Straits with a grand ball in the new automobile metal body factory building recently added to the plant, at Maybury Grand boulevard and the Grand Trunk railway. Over 700 attended. The company has progressed rapidly since its start here in the manufacture of auto sheet metal parts, fenders, radiators, hoods, dashes, tanks, fenders and battery boxes. The company soon will increase its force to 300 hands.

Creditors of the Harrison Wagon Works, of Grand Rapids, are in receipt of checks in payment of a 15 per cent. dividend, the total amount distributed being $66,000. This makes 50 per cent. that has been paid on their claims.

The Jackson Carriage Co. received 150 orders during the month, to be fiilled before April 1. Business is reported to be booming.

The factory of the Standard Vehicle Co., of Pontiac, which had been in the hands of Receiver C. V. Taylor, has been sold at auction to O. J. Beaudette, also of Pontiac, for $12,000. Mr. Beaudette, who is at the head of the Beaudette Body Co., will utilize his newly-acquired property as a trimming shop for bodies. Mr. Beaudette had held a mortgage on the property.

J. Q. Look, of Adrian, administrator of the estate of Capt. C. R. Miller, of Hillsdale, has been elected a member of the board of directors of the Hillsdale Truck & Wagon Co., in which Capt. Miller was a director at the time of his death. Efforts will be made to standardize the product of the company.

Horace Jerome, formerly of Hillsdale, who recently severed his connection with the Northern Motor Car Co., of Detroit, has become associated with the Columbus Buggy Co., of Columbus, O., as manager of their gasoline automobile department.

A creditors' suit has been brought by the First State Savings Bank of Hillsdale against fifty-six stockholders of the defunct Kesselring Hub & Wheel Co., of Hillsdale, by the filing in circuit court of a bill in chancery. Judgment was rendered in this court on August 22 last in favor of the bank for $7,920.42 on notes held by the bank against the wheel company. The Kesselring concern, after a number of vicissitudes, went out of business, its property being taken over by the Hillsdale Truck & Wagon Co. The latter has been developing a growing business and is in no way concerned in the suit.

It is recited that the stock was purchased by these fifty-six persons at 50 cents on the dollar, and the object of the present suit is to compel the payment of the balance of the value, or enough of it to satisfy the claim of the bank and other outstanding debts.

The Dolson automobile plant of Charlotte, with its equipment and two parcels of real estate belonging to the bankrupt concern, were advertised to be sold at public auction by Receiver Hathaway on December 14. It was expected at the time of the announcement that the banks of that city would bid in the factory. Mr. Hathaway then said that the creditors would realize about 15 cents on the dollar. The firm's liabilities were given as $140,000.

The Hayes Wheel Co. is developing to a gratifying extent, at Jackson. Already there are 150 men employed, and the plant is producing 800 wheels daily. In the near future this amount will be increased to 1,200 wheels.

F. O. Arnold, sales manager of the Hillsdale Truck & Wagon Co., has been making exhibitions of his patent revolving axle. He claims the invention has proved far beyond his most sanguine expectations and claims that it is the most durable and the lightest running axle that has yet been offered in the American market.

Articles of incorporation have been filed by the Detroit Auto Dealers' Association, the object of which is to promote the trade and hold races and shows.

Articles of association of the Hereshoff Motor Co., capitalized at $90,000, have been filed with the county clerk, in Detroit. Charles F. Hereshoff, formerly of Bridgeport, Conn., but now of Detroit, the noted shipbuilder, holds 999 shares of the stock.

The Vulcan Gear Works, Detroit, has been incorporated with $25,000 capital.

The Crescent Motor Co., of Detroit, has increased its capital stock from $55,000 to $125,000.

The Twin City Motor Co., of Houghton, has filed articles of incorporation, giving its capital stock as $30,000.

A HALF CENTURY WITH VALENTINE.

Fifty years of service with one institution is a record that but few mortals can boast of. In this case it is not a boast but a record that will bear investigation, as the party to whom this refers is none other than Charles E. Morrill, the esteemed president of Valentine & Company, of New York.

In reviewing the association of Mr. Morrill with this house, we find him entering the employ of Stimson, Valentine & Co., of Boston, Mass., in January, 1859, as their New England representative. In these days a carriage varnish salesman would not look upon New England as a territory offering any great opportunity to a live roadster. But fifty years ago and to-day is another story, as in the old days New England was the great vehicle center of the United States, and Mr. Morrill achieved wonderful success in this territory.

Shortly after his association with the house the style of title was changed to Valentine & Company, and later removed their headquarters to New York.

During the seventies the carriage trade drifted toward the West, and in 1878 Mr. Morrill went to Chicago to look after the Valentine interests in the West. While in this territory he organized the Lawson Varnish Co., which prospered under his management and became the leading institution in the West. In 1899 the company was consolidated with Valentine & Company, and in the following January Mr. Morrill was chosen president of the greater organization.

Mr. Morrill during his association with Valentine & Company opened up trade relations all over the world, and left a trail that brought forth the acknowledgement that Valentine's varnishes were the best known goods on earth.

As Charles E. Morrill rounds out his half century of effort, The Hub wishes not only to extend congratulations, but hopes to see him at his post for many January's to come.

In commemoration of the event Valentine & Company presented Mr. Morrill with a beautiful silver loving cup.

Digitized by Google

OBITUARY

C. F. Kimball.

The death of C. F. Kimball marks the going out of the last member of a famous family of carriage builders. Although in failing health for the past few years, he made a brave fight against the inevitable; but, alas, stricken, sore and weary of the struggle, the curtain was drawn on Thursday, Jan. 7, 1909, thus closing a brilliant career, and taking from the trade and the C. B. N. A. an active and energetic worker. The reputation of C. F. Kimball was more than local, inasmuch as he was known to the trade of the entire country, and no man possessed a greater host of friends who held him in the highest esteem than he. His death comes as a great shock to the pioneer builders and the trade, who not only sympathize with the bereaved, but demonstrated their affection by making long journeys to personally pay their last respects to the departed.

Mr. Kimball possessed a pleasing individuality and many traits of character that might well be emulated by all. During his life no man ever made a journey to Chicago to see Mr. Kimball without receiving and audience and being made to feel that he was a human being with rights to be heard. He treated all men as he would wish others would treat him. Thus to meet him made a man feel that life was not such a burden after all. He was the type of man of which there are too few. With high ideals, free from egotism, his life, a monument of great proportion, will ever remain an oasis in the memory of all whose pleasure it was to know him.



For many years he was the head of the firm of C. P. Kimball & Co., Chicago, which under his management prospered and enjoyed the patronage of the best trade of Chicago and its surrounding territory. Mr. Kimball is survived by his widow. He was 54 years old.

Joseph Riddlemoser.

Joseph Riddlemoser, for many years in the carriage manufacturing and livery business in Baltimore, Md., died in that city on December 1. He leaves a wife and six children.

Leonard Borschneck.

Leonard Borschneck, 87 years old, died January 2 in his home at Newark, N. J. He was for years employed in a responsible position in the Brewster carriage shops in New York and in the Quinby carriage shops in Newark. Later he was for years in the same business for himself in Rahway, N. J. For many years he attracted much attention on account of his marked similarity in appearance to Mark Twain. His father was a soldier under Napoleon and fought in the battle of Waterloo.

Henry Wiemann.

Henry Wiemann, senior member of the firm of Henry Wiemann & Sons, carriage manufacturers of Lexington, Ky., died December 19 from the effects of a stroke of paralysis. He is survived by three sons and one daughter.

Michael G. Campbell.

Michael G. Campbell, carriage manufacturer, died January 4 of paralysis at his residence, No. 269 Clifton place, Brooklyn. He was fifty-nine years old. A widow, one son and two daughters survive.

Wilbur Slack.

Wilbur Slack, a prominent wagon wheel manufacturer of Trenton, N. J., fell dead from apoplexy December 26. Mr. Slack moved to Trenton about ten years ago from Frenchtown, N. J.

Charles W. Bradstreet.

Chas. W. Bradstreet, of Winchester, Mass., for many years identified in the carriage manufacturing business in Boston, died December 28, aged 76 years.

Joseph Franklin Lincoln.

Joseph Franklin Lincoln, 70 years old, formerly a carriage manufacturer, and who of late years had lived at the State Soldiers' Home. in Noroton, Conn., died in Norwalk. Shock induced by a fall from a trolley car, which fractured his shoulder, caused a stroke of apoplexy.

Edward Gannon.

Edward Gannon, a carriage and wagon manufacturer of 52 Stockton street, Brooklyn, N. Y., died suddenly at his home, 145 Stockton street, on Tuesday, December 1, aged 39 years. A widow and four sons survive him.

John W. Spalding.

John W. Spalding, of Champaign, Ill., died at the home of his son in that city on November 22 from a general breaking down. Mr. Spalding was a native of Hamilton county, Ohio. In the early 60's he went to Champaign and engaged in the manufacture of wagons, being a pioneer in this line in that vicinity. Five children survive him.

S. Rhinehart.

S. Rhinehart, for many years a wagon maker at Columbus, Ohio, died in that city on November 13 aged 85 years. His widow survives.

William Blume.

William Blume, founder and head of the Blume carriage works, Scranton, Pa., a veteran of the civil war and one of the best known old residents of that city, died at his home in that city on December 3, aged 70 years.

Jacob Weber.

Jacob Weber, for forty-five years a wagon manufacturer at 532-534 East Market street, Louisville, Ky., died in his sixty-third year at his home in that city on November 29. He is survived by his wife and six children.

Warren Ivers.

Warren Ivers, who was engaged in the carriage manufacturing business for twelve years following the civil war at Cambridge, Mass., as a member of the firm of Ivers & Tucker, died very suddenly while riding in a street car in that city on November 28, aged 69 years. In recent years he has held a number of political positions.

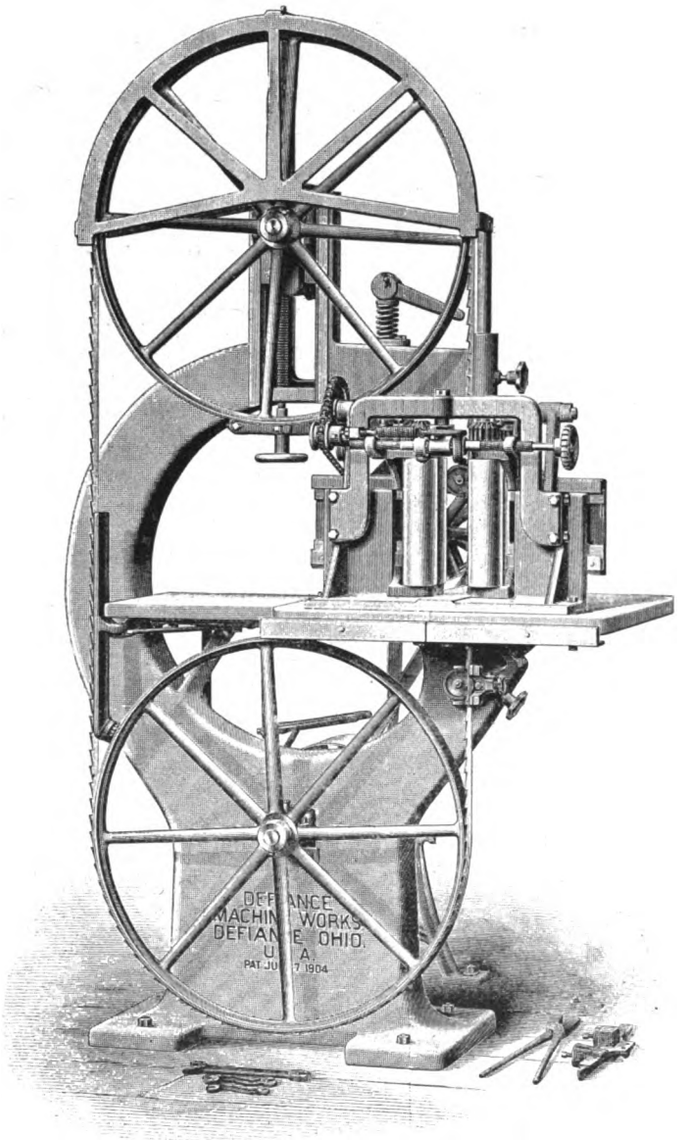
Richard Holmes.

Richard Holmes, a retired carriage manufacturer, died at his home, 100 South Huntington avenue, Roxbury, Mass., December 29, aged 86 years. He had been ill about two years and death was due to a general breakdown of his health. He is survived by a widow, one son, Frank F. Holmes, and four daughters.

Digitized by Google

BAND, SCROLL, RIP AND RE-SAWING MACHINE.

The accompanying engraving shows the new No. 6, patent 36-inch band, scroll, rip and resawing machine manufactured by the Defiance Machine Works, Defiance, Ohio, which is a most conveniently arranged tool for doing various kinds of band scroll sawing, ripping and re-sawing lumber. It is a combination of three machines in one, and it can be changed in a few moments' time from one class of work to the other. It has proven to be a general favorite among wood workers. It is suited to the very finest scroll sawing required in piano and organ factories, pattern shops, fancy wood-workers, etc., as well as



the heavier kinds of work such as sawing low beams, wagon and carriage wood stock, agricultural implement parts, ship and car work, sawing hardwood with a saw blade as wide as two inches. All the adjustments on this machine are so perfect that it can be run constantly without injury to the saw blade or the machine.

The frame is of modern design, and is casts in one piece, with cored center, making it strong and reliable, and provided with a broad floor base to stand firm. The saddle supporting the upper wheel is accurately fitted to the frame in planed and scraped angle-ways. It is adjustable vertically by hand wheel and screw to accommodate various lengths of saw blades, taking at the longest a saw 18½ feet. The saw wheels are 36-inch diameter, 2½-inch face, covered with solid endless rubber bands ¼ inch thick, which are ground true and given a running balance by our patent method, making them capable of running at a high rate of speed entirely free from vibration.

The patent tension device is provided with a compression spring in connection with the upper wheel, which provides the exact amount of tension to the saw under all conditions, instantly accommodating itself for light or heavy sawing unlike the old style weight affair, which is cumbersome and slow to act. It is is a well-known fact that a spring will act 100 times quicker than a weight, which means that the spring tension will meet and correct 100 variations in the strain of the saw while the weight is getting in motion to take care of one, and very likely, because of its inertia, missing that. The saw will cut perfect work only when the tension is accurate. By a single hand screw, the upper saw wheel can be tilted while running to lead the saw to any path desired over the face of the wheels.

The table of iron, is 30 inch by 34 inch, planed true and arranged to tilt 45 degrees angle for bevel sawing. The top is laid off in inches and fractions and fitted with a patent rip saw gauge, to be used for ripping lumber. This gauge can be instantly placed on or removed from the machine. Patent non-friction guides are used above and below the table, and are warranted not to heat or injure the saw blade.

The re-sawing attachment consists of four vertical feed rolls, all powerfully driven, with three changes of feed to saw 20, 30 and 40 feet per minute, and it will accommodate material up to 12 inches wide x 4 inches thick or any sizes under, and it will saw the stock parallel or beveling and to any thickness required.

This machine measures 36 inches from the inside of the frame to the center of the table, giving ample room for wide sawing. When the guide stem is lifted to its highest position, it will take work 12½ inches thick. All spindles are of ground steel and run in long self-lubricating bearings. The tight and loose pulleys are 14-inch diameter, 4-inch face, and provided with an improved belt shipper, to be operated from the front side of the machine, and they should run 500 turns per minute. The loose pulley is fitted with bronze bearings and a self-oiling device. Horsepower to drive, 3; floor space occupied, 42x60 inches.

SECTIONAL TIRES.

The question that is causing considerable thought and meditation on the part of builders of commercial motor vehicles is that of tires. The matter of what is the best and most satisfactory form of tire to adopt is now evolving in his mind. Evolution is the principle through which all forms of mechanical appliances must pass to reach the goal of perfection.

The solution of the commercial motor vehicle tire question at the present time is beautifully demonstrated in the Kelly-



Springfield Sectional Rubber Tire, which is illustrated herewith. The reputation of the Consolidated Rubber Tire Co. in solid rubber tires stands as a guarantee and insures the quality and practicability of their latest production.

Every section is a tire unto itself, gripping the road and going ahead immediately when power is applied to load. Examine construction closely, turn to advertisement on another page, then write for full particulars.

Digitized by Google

RECENTLY EXPIRED PATENTS OF INTEREST TO THE CARRIAGE TRADE.

Patents Expired November 10, 1908.

462,682—Lock for Wagons. T. F. Bashaw and B. P. Scovill, St. Lawrence, S. D.
462,734—Draft Equalizer. J. J. Prater, Newtonia, Mo.
462,754—Wagon Brake. W. R. Wilcox, Ridgway, Colo.
462,860—Thill-Coupling and Thill Support. E. S. Gehman and F. Yeakel, Bally, Pa.
462,873—Vehicle Spring. J. H. Gunn, McLean, N. Y.

Patents Expired November 17, 1908.

463,133—Vehicle Wheel. H. Barler, Delaware, Ohio.
463,179—Two-Seated Carriage. F. N. Vanier, Amesbury, Mass.
463,181—Vehicle Wheel. J. B. West, Rochester, N. Y.
463,241—Vehicle Wheel. C. E. Bell, Nashville, Tenn.
463,251—Coal Wagon. E. L. Layton, Trenton, N. J.
463,274—Folding Tongue for Vehicles. A. S. Gilkey, Burlington, Kan.
463,293—Vehicle Spring Support. T. B. Mayell, Albany, N. Y.
463,355—Wagon Jack. W. Leavegood, Sacramento, Cal.

Patents Expired November 24, 1908.

463,669—Running Gear for Wagons. S. E. Oviatt, Lansing, Mich.
463,740—Wheel. F. P. Circle, Springfield, Ohio.
463,772—Draft Equalizer. R. Wickham, Canaan, N. Y.
463,776—Draft Equalizer. H. E. Pridmore, Chicago, Ill.
463,797—Axle. H. C. Shultz, Hamlet, Ind.
463,936—Vehicle. H. H. Bothe, St. Louis, Mo.

Patents Expired December 1, 1908.

464,012—Draft Equalizer. A. Crannell, Mound City, Mo.
464,217—Hammer for Driving. W. Jacoby, Fulda, Minn.
464,220—Anti-Rattler for Thill Couplings. E. E. Stephenson, Wabash, Ind.
464,302—Machine for Setting Tires. F. Heavener, Helena, Mont.
464,366—Hub. B. S. Kennett, New Albany, Ind.

Patents Expired December 8, 1908.

464,570—Wagon Bed. B. F. King, Forest Home, Tenn.
464,724—Operating Device for Brakes. G. R. Rogers, Parkersburg, Ind.

The above lists of patents, trade marks and designs of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City.

RECENTLY GRANTED PATENTS OF INTEREST TO THE CARRIAGE TRADE.

902,042—Equalizer Hook for Vehicle Draft Apparatus. J. B. Ashenfelter, Olex, Ore.
902,214—Axle Skein. S. K. Dennis, Chicago, Ill., assignor to International Harvester Company.
902,218—Lock-Equipped Whip Socket. M. Ellingson, Brooten, Minn.
902,147—Tire. E. T. Greenfield, Kiamesha, N. Y.
902,072—Wheel. R. K. Gregory, Greensboro, N. C.
902,319—End Gate for Wagons. W. H. Palmer, Council Bluffs, Ia.
902,250—Emergency Repair Device for Vehicle Springs. D. P. Power, Riverdale, N. J.
902,009—Vehicle Tire. F. A. Stall, Jr., Darlington, S. C.
902,345—Self Propelled Sleigh. C. E. Tetreault, Newport, Vt.
902,127—Hub Securing Device. J. A. Weitzel, Rochester, N. Y.
902,458—Sleigh. C. A. Wetmore, Watson, N. Y.
902,459—Umbrella Support for Carriages. J. C. Williams and A. B. Conner, Soperton, Ga.
902,360—Wagon Brake. J. Wulf, Omaha, Neb.
902,852—Vehicle Axle. W. Betz, Wataga, Ill.
902,853—Axle Journal. W. Betz, Wataga, Ill.
902,551—Tire Jacket for Vehicle Wheels. J. Bowie, Omaha, Neb.
902,716—Axle Setter. J. S. Cross, Wamsley, Ohio.
903,066—Tire. F. A. Ellis, London, England.
902,965—Vehicle. C. E. Howe and J. J. Kingston, Wabash, assignors to Wabash Manufacturing Company, Indianapolis, Ind.
902,887—Folding Buggy Top. Robert Kolbe, St. Louis, Mo.
902,824—Vehicle Tire. G. Lambright, Rutherford, N. J., assignor of one-half to F. A. Magowan, New York, N. Y.
902,689—Machine for Treating Metallic Tires. E. L. T. Schaub, Columbus, Ohio.
902,113—Singletree and Doubletree. G. P. Simpson, assignor of one-half to T. Gooch, Marysville, Idaho.
902,614—Quick Shifting Anti-Rattling Thill Coupling. C. E. Sjoman, Lake Park, Minn.
902,926—Vehicle Tire. J. A. Swinehart, Akron, Ohio.
903,352—Folding Step for Vehicles. C. Black, Hawesville, Ky.
903,447—Vehicle Axle. H. B. Bush, Littleton, Colo.
903,544—Running Gear. D. W. Connell, assignor to Pontiac Buggy Company, Pontiac, Mich.
903,176—Vehicle Gear. I. Cornwell, Northumberland, Pa.
903,681—Vehicle Wheel. L. J. Crawford, Juniata, Neb.
903,185—Reversible Dump Wagon. C. A. Geiger, J. F. Eccard and R. H. Sotherland, Jr., assignors to Troy Wagon Works Company, Troy, Ohio.
903,707—Manufacture of Rubber Tires—J. T. Gordon, Indianapolis, Ind.
903,708—Vehicle Wheel. G. H. Groth, assignor of one-half to A. N. Groth, Cincinnati, Ohio.
903,740—Singletree. A. E. Levins, Vernon, British Columbia, Can.
903,305—Whiffletree. J. E. McCorkle, Harper, Kan.
903,764—Buggy Shaft Support. B. M. Perdue, Franklin, Ky.
903,330—Draft Equalizer. J. Siemsen, assignor of two-thirds to J. H. Bearss and D. L. Klingman, Kearney, Neb.
903,241—Fifth Wheel. I. Teeter, Chatham, Ont., Canada.
903,346—Draft Equalizer. H. Watson, Cairo, Neb.
903,256—Vehicle Wheel. M. L. Williams, South Bend, Ind.
904,295—Apparatus for Forging Axles. J. H. Baker, Allegheny, Pa.
903,845—Wheel Attachment. L. L. Curtis, Geary, Okla.
904,473—Draft Attachment. D. W. Davis, Dresden, Ohio.
903,847—Brake Mechanism for Wagons. E. G. Doland, Starsboro, Vt. Vermont.
904,067—King Bolt Spring. T. Karle, Boston, Mass.
904,148—Lever and Ratchet fer Vehicle Brakes. M. Potter, Fishkill-on-the-Hudson, N. Y.
904,361—Wagon Brake. R. C. Pryor, assignor of one-half to C. U. Stottlemyer, near Wolfsville, Md.
904,023—Vehicle Wheel. T. A. Silverwood, London, England.

Copies of above patents may be obtained for fifteen cents each by addressing John A. Saul, solicitor of patents, Fendall Building, Washington, D. C.

WOULD LOCATE ELECTRIC CAR FACTORY IN THE EAST.

Mr. O. P. Fritchle, manufacturer of electric motor cars bearing his name at Denver, Colo., recently arrived in New York City after a successful run in one of his machines from Lincoln, Neb.

The notable features of the car are that it runs one hundred miles on ordinary roads with a single charge, and that it requires an average of only about fifteen volts to make twelve miles an hour speed. He succeeded in reaching New York from Philadelphia, via Newark, a distance of 108 miles, with one charge.

Mr. Fritchle says that the electrics are used very much more extensively in Denver and the far west than they are here, and he attributes this largely to the longer radius made possible by his car, the average mileage capacity of all other electrics being only about forty miles.

Aside from his purpose of demonstrating the touring possibilities of his car, Mr. Fritchle's trip is being made with the idea of locating an Eastern factory. After a short stay in New York he resumed his journey, leaving for Washington.

CHANGE OF ADDRESS.

Realizing that in union there is strength, the celebrated old house of Edward Smith & Co. have given up their New York City office and removed the executive end of the business to their works at Long Island City. This not only brings the two departments of the business closer together, but greatly facilitates production and efficiency of service. The peculiarities of varnish and color making necessitates a close relation of office and factory, and this change will undoubtedly work to the mutual benefit of the house and trade.

News of the Trade

NEW FIRMS AND INCORPORATIONS.

I. E. Hess, of Drew, Miss., is about to establish the Hess Wagon Works at Greenville, Miss.

The H. F. Keyes Wagon Co., of Clinton, Mass., has been reorganized in Boston with a capital stock of $50,000. The officers are: President, Frank E. Bailey, Lowell; vice-president, Allan J. Chase, Malden; treasurer, Frank W. Crocker, Malden; directors, Walter W. Wright and Clifton W. Cheney. The company will carry on a more extensive business, manufacturing beef wagons and fire apparatus.

A corporation has been formed for the establishment of a buggy factory in Ft. Worth, Tex.; capital, $25,000. The principals in the enterprise are from St. Louis, Mo.; Marshall and and Mineola, Texas.

A company is being organized in Camden, Ark., to establish a large wagon factory in that city to take the place of the Agee plant recently destroyed by fire.

United States Carriage Co., No. 1458 Wabash avenue, Chicago, has been incorporated to deal in vehicles; capital, $300,000. Ohio corporation.

The L. J. Kingsley Co., Binghamton, N. Y., manufacturing carriages and wagons, with a capital of $100,000, has been incorporated by L. J. Kingsley, J. W. Sturtevant and others.

J. J. Holt has re-entered the carriage business at Jefferson City, Mo.

Digitized by Google

The Spoke Puller Mfg. Co. has been incorporated at Atlanta, Ga., with a capital of $200,000. J. B. Arthur, of Kansas, and A. S. Wilkins, J. M. Bishop, O. C. Branch, J. R. Crenshaw are the incorporators.

Work has been started for the construction of the large new factory of the Freeport Carriage Company, a branch of the Moline (Ill.) Plow Company. The new building will contain 150,000 square feet of floor space.

T. H. Temple has opened a wholesale and retail implement and vehicle store at Mt. Hope, Kan.

The M. Weber Company, of Dayton, Ohio, manufacturers of wagons, carriages and buggies, has been incorporated for $10,000.

John G. Dix Son Company, capital $10,000, has been incorporated to engage in the wagon making business at Memphis, Tenn.

Burnsville Wagon Company, of Burnsville, W. Va., has been incorporated. The capital stock is $10,000. The incorporators are F. H. Fidler, John I. Bender, W. G. Meadows, N. Ruth and Hugh Amos.

BUSINESS CHANGES.

Holmes & Sons, of Farmer City, Ill., have sold their implement and vehicle business to John Trinkle, of Bloomington.

The partnership between P. P. Hunter, of Cincinnati, and E. D. Taylor, of Birmingham, doing business under the firm name of the Taylor Carriage Company, at Birmingham, Ala., has expired by limitation. Mr. Taylor has bought all of the stock of the company and will continue the business.

The Broyles, McClellan & Lackey Co. and the H. T. Hackney Vehicle Co., of Knoxville, Tenn., have been consolidated and will do business under the name of the Hackney, Broyles & Lackey Company.

The Jelie Motor Vehicle Co., of Moline, Ill., increased its capital from $100,000 to $400,000. The company intends to put a motor car on the market.

Thornton Buggy Company, Hoopeston, Ill., has changed its name to Hoopeston Carriage Company.

The firm name of J. W. Barber & Son, vehicle dealers, Raleigh, N. C., has been changed to Barber & Fowler.

BUSINESS TROUBLES.

James P. Murphy, carriage maker, 858 Watertown street, Newton, Mass., has filed a petition in bankruptcy. He owes $1,177. No assets.

John D. Dennis & Sons, carriage manufacturers, 274 Broad street, Lynn, Mass., on December 29, in the U. S. Court, Boston, filed a petition of voluntary bankruptcy. The firm owe $5,476.74 unsecured, $1,625 in notes and a total of $7,123.74. The assets are $1,125, of which $800 is stock in trade.

The Dallas Buggy and Wagon Company assigned December 7. The assets amount to $18,701.07 and the liabilities to $25,220. B. Blankenship is named as assignee. The largest creditors of the concern live in Fort Worth.

The plant of the Bender Wagon Company, bankrupt, Texarkana, Ark., was sold by E. A. Dryer, trustee, to R. G. Wilson, of Salt Lake City.

The Millcreek Wagon Co., of Cincinnati, Ohio, went into receivers' hands on December 9. The First National Bank, of Aurora, Ill., which made the application, is a creditor on a note for $5,958. It is alleged that because of connection with the Cypress Lumber Company the defendant is unable to discount trade paper, and is embarrassed in carrying out its contracts. The assets are estimated at $80,000 and the liabilities at $50,000.

FIRES.

Fire destroyed the wagon shop of E. Y. McClellan, in Sycamore, Ohio. Loss estimated at $3,500.

Fire did small damage to the wagon factory of Van Orden & Hill, East Orange, N. J., December 16.

Fire destroyed the carriage factory of William Bright, at Scranton, Pa., December 6, entailing a loss of $12,000. Partially insured.

Fire destroyed the blacksmith and wagon ship of John Heimlech, at Lime Rock, N. Y., December 9. Partially insured.

Damage to the extent of $15,000 was done to the rim shed of the Virginia & North Carolina Wheel Works, at Richmond, Va., on December 21.

The carriage factory of Hancock & Reidy, Malden, Mass., was destroyed by fire on December 24. Loss, $2,000; covered by insurance.

MISCELLANEOUS.

W. A. Ebbert, former sales manager for the Moline Wagon Co., Moline, Ill., and a well known figure in the implement world, who recently sold his interest in the Hickman-Ebbert Wagon Company, of Owensboro, Ky., has accepted a contract to manage the Pekin Wagon Company, of Pekin.

Machinery is being installed in the Turnbull Wagon Works, Defiance, Ohio, for the manufacture of automobile wheels on an extensive scale.

W. L. Holt, secretary and treasurer of the Three States Buggy and Implement Co., at Cairo, Ill., has resigned to become manager of the Hartman Mfg. Co., of Vincennes.

It is reported in New Haven, Conn., that the H. E. Demarest Company, carriage manufacturers in Chapel street, is to close out its business in that city and move to New York.

The Bridgeport (Conn.) Vehicle Company is building a three story brick and steel factory at Fairfield and Holland avenues. It will be 90 x 160 feet in dimensions, and will cost $60,000. Harry D. Miller is president of the company.

Worthington Clark Auto Co., Fond du Lac, Wis.; capital, $20,000; by G. W. Worthington, E. W. Clark and others.

The wood department of the LaPorte (Ind.) Carriage Company is running twelve hours a day. This company has double the orders at this time that it had last year. The company is building automobile bodies, and in this department it has been rushed since election.

The Gregg Carriage Co., Philadelphia, Pa., are about to erect a salesroom building at Twentieth and Arch streets, to cost $35,000.

The buggy factory to be built at Covington, Ga., by a company composed of John M. Wright and others will be a two-story fireproof structure, 60 x 100 feet, and will cost $9,000. Its estimated capacity is 1,000 to 1,500 buggies annually.

The Shaver Carriage Company, Des Moines, Ia., are extending their product into the manufacture of farm wagons.

Joseph A. Hemsley has disposed of his carriage building business at North Trenton, N. J.

The Empire Auto Specialty Co., Berea, Ohio; capital, $10,000; by L. C. Loomis and others.

The Washington (N. C.) Buggy Co. will erect a large two-story factory, 100 x 250 feet.

The Oakland (Cal.) Carriage and Implement Company has added an automobile department.

The Hearsey-Willis Company, Indianapolis, Ind., is closing out its carriage business, and in the future will devote its entire attention to the automobile and bicycle trade.

The Elk Buggy Co. has moved into new quarters on Slaton avenue, Griffin, Ga.

The F. A. Ames Carriage Company, Louisville, Ky., is erecting a four-story addition extending almost an entire block.

ture automobiles; capital, $2,000; by L. H. Wangelin, Joseph Schwarz and others.

International Automobile Co.; capital, $20,000; 1106 Fisher Building, Chicago; to manufacture automobiles and accessories; by E. C. Haynes, C. E. Hall and others.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

More automobile Plants Coming.

Notwithstanding the frequent failures of automobile builders, there is a good deal of capital. The reasons for past failures have been thoroughly investigated by those who now propose to part with their hard cash in building new plants and spending large sums to establish the business on a permanent basis. Conditions must certainly have materially changed when so much money is now available. The foundations of the industry have been strengthened by the numerous failures. The errors and shortcomings are known, and the demands of the future are more thoroughly understood.

One interesting feature in the projected automobile building enterprise, or most of them, is that the plants are to be large, running up to 300 or 500 capacity. Of course there are automobile plants where the capacity is far beyond these figures. But the day of small automobile plants is past, and reliance will be placed in magnitude of operations.

Farmers' Automobiles.

The good, smooth, level roads of certain sections of the west are favorable to the adoption of a cheap and serviceable form of automobile. The possibilities of an automobile trade among the farmers is being industriously cultivated by a few builders in the west who in recent years have reached a high point in vehicle construction. So far the use of automobiles has been experimental. The carriage builders saw an opportunity and seized it, and are making a name and a trade which promises to be permanent.

The field is certainly broad enough. The autos which have been specially designed and built for farmers' use are serviceable. They save time and money, and confer special advantages which the farmers are quick to seize. The builders, or some of them who have entered this field, are about to enlarge their plants.

The Aeroplane.

While the aeroplane is not an automobile, there is a certain association between the two which makes the preparing of this maturing invention a matter of interest. Opinions as to the future of the aeroplane vary widely. There are those who believe that within five years it will constitute a new industry. Many believe that for making short runs or sails within a limit of two hundred miles that it will in a degree supplant other methods of travel. Some believe the aeroplane will be confined largely to military uses, while others assert that as a means for pleasure riding it can be made practicable and popular.

Experiments have not gone far enough to prove an idea as to cost. The important problem at present is to fly. Some experts think that the imitation of the bird-shape of construction is fundamentally wrong, and that the final form will be a number of small bird-like shapes joined together. One aeroplane is now under construction to cross the British Channel.

Renewed Interest in Good Roads.

The interest in good roads has taken a permanent hold not only on automobile interests, but upon the general public, as evinced by bills to be considered during the coming legislative session in a number of States. It is no longer a matter of sentiment to advocate good roads. Pennsylvania is elaborating a plan to expend four or five million dollars yearly for ten to twelve years to create a system of highways between county seats. Ohio, Indiana, Missouri, Kansas and a score of other States have become imbued with the idea of good roads, not for the sake of the automobile, but for the good of the States at large. There will be a general swinging into line. It has taken years to educate the people, and the fruit is now ripening. The masses of the people never see battle ships nor deep harbors, and only occasionally have a glance at palatial public buildings, but they see bad roads almost every day, and a large percentage of the population suffer from them.

Seeking Automobile Trade Abroad.

A few enterprising automobile manufacturers have started out to see what trade they can pick up in Europe and South America. There is certainly a broad field in other countries for American work, for several reasons. The light automobile is the machine of the future here and throughout the world. The European builders who made so much of the heavy machine and of racing machines are getting away from their old ideas, and are appreciating the fact that there is a wider and more permanent field for the lighter and cheaper car.

This is a fact. There is no need for enormous machines that tear up roads and call for long delays, for extensive and difficult-to-make repairs. Where there is a customer for one such machine there are one hundred customers for a light, attractive and easily handled and easily repaired machine. Cost of manufacture is of course the prime factor in the export problem. Whether European makers, with their lower wages and cost of material, can cut under our higher priced cost of production remains to be seen.

Smaller Cars.

European automobile builders, as elsewhere intimated, are getting away from large construction, and are entering upon smaller construction wherein some of the more important features are the use of the I beam more generally, pressed steel frames arched above the rear axle or dipped in front of it, three quarter rear springs; the carrying of the load between the axles, with brakes operating the rear wheel drums, one set expanding within the drums and the other contracting upon it.

Users of immense machines are tiring of them, except for special purposes and uses where they will always be required. American builders began some time ago to work along these more practical lines, and they are already realizing the wisdom of their instincts. Smaller cars are wanted. The future of the industry is to be found in that field.

Digitized by Google

New York Automobile Show

The show of the American Motor Car Manufacturers' Association, held the first of this month at the Grand Central Palace, in Lexington avenue, New York City, was lacking in any revolutionary constructional novelties in the automobile line. Fifteen months had lapsed since the same group of car builders met on a common ground to display the models of the incoming season, and naturally in that space of time the hopeful and untiring designers succeeded in evolving many minor innovations. But in the matter of extraordinary novelty there was nothing that stood out.

The most striking feature of the exhibition was the almost universal desire to cater to the demand for a medium powered and moderate priced car for the man whose money is limited. Another striking feature was the general effort to attain refinement in details over the already laudable productions of other years.

In general during the varying stages of the industry the trend of builders has been in two directions—to put out either an expensive car or a cheap one. The movement that began last year in the direction of producing a type of machine that should combine all the qualities of the expensive automobile in miniature is now widespread, and finds its outlet in the dozens of cars that compare in all ways except with regard to size and power with the creations of former years whose price ran up into the thousands.

In this show it was distinctly noticeable that while there were cars of all kinds, at prices ranging from $150 for the tiny runabout for children up to $7,000 for an artistically fitted landaulet, the great mass of complete exhibits ranged from $1,000 to $3,000. From one price to the other could be obtained all classes of touring and town cars, fitted with all types of bodies and accessories. There were, in addition, many machines of small power whose prices were only in the hundreds, and these, too, represented extremely good value for the money if acquired reputations for stability and speed in their forerunners prove to have been retained in the new models.

Bodies and Wheels.

In body design the short, handy town car, with its close coupled chassis was found at many exhibits. Wheels larger than ever were seen on every hand and delighted the pioneers, who years ago stood for wheel sizes that were right. On the heavier vehicles the thirty-six inch wheel has become practically standard, while forty inch on the American does not look unduly large, as did the thirty-six inch wheels of a few years ago. Tires have slightly increased in cross section in the long struggle to get the same reliability in this part of the vehicle that other parts now give.

Springs.

Much ingenuity has been expended in body hanging and spring design. The once all but universal semi-elliptic spring has been largely replaced by full elliptic and three-quarter platforms which make easy riding qualities. Springs have been improved in unseen ways, such as by the use of steels unknown a few years ago, which are capable of greater elasticity and longer life.

Racy Lines.

The effect of racing was very apparent in the appearance possessed by a majority of the tourist and runabout models. "Close to the ground" is a description that fits very many of the 1909 models, and the appearance of speed is further enhanced by moderately long wheel base and the pronounced angle of the steering column. The possession of speed producers, it would seem, is still the desire of the many, to judge by the way the spectators crowded about the spaces in which were displayed models for which are claimed the ability to annihilate space, not to speak of the extraordinary attraction for all in the actual racers that were shown by some of the representatives of foreign factories.

The American car, because of the approach of standardization in design and material, is a distinctly improved product this year. With few builders making any effort at getting away from accepted types, it has naturally become a matter of improvement in detail, and this was shown on all parts of the exhibits. In the matter of transmission there is a noticeable change, many of the makers having turned to the shaft drive, which appears to be entirely displacing the chain.

The Foreign Car.

With the independent American manufacturers in the Palace this year were the foreign makers, whose models have been displayed in the past at a separate exhibition. The opportunity for actual comparison of home and foreign productions was one of the features of the show. Their cars possess the same individuality and appearance of stability that have always been distinctive features of the European output, and it was freely claimed that the demand will not diminish during the season just begun.

Internal Combustion.

The four-cylinder engine was ahead, in point of numbers, but there were many six-cylinder cars on view, that type of motor apparently having taken its place on machines of high power and on some of less than 50-horse power. As far as the relative merits of the four and six cylinder engines go, both are now of accepted types. The "six" is no longer an uncertainty, having demonstrated that for large cars it fills the requirements more satisfactorily than the smaller engine. With the general introduction of small cars, however, the four-cylinder engine appears likely to remain largely in the majority, despite the claims of superiority advanced by those who advocate the six-cylinder type.

More closely connected with the internal construction were such things as magnetos. Advocated by a few leading spirits for years, the magneto has at last largely come into its own and its adoption on vehicles of less than $1,000 in price marks a distinctive step forward in certain and satisfactory sparking.

The oiling systems have been simplified and placed on or near the parts they serve instead of on the dash. Speedometers and odometers and often clocks have been combined into one instrument, which is a serviceable ornament instead of a complicated clutter. For the first time were introduced vehicles which do not even have oilers, but feed the oil with the gasoline.

Many makes now have reserve gasoline tanks which have one compartment that will not run empty till the main tank has been emptied and the operator forced to open the reserve supply cock, after which he can proceed some miles further and have time to secure a new supply.

The Commercial Vehicle.

Rapid improvement was shown in the line of commercial vehicles, some of the smaller kinds showing artistic beauty that was utterly unsought three or four years ago. With streets and roads gradually improving in cities, towns and in the country, the manufacturers of the utility vehicles are finding it possible to greatly reduce weight, or at least to furnish much greater power on business wagons of the same weight than was possible in the earlier days of the industry.

Passenger cars for public use and trucks have not yet been brought to anything resembling a standard, as is the case with the pleasure cars, but in this respect there is little or no demand for a standard type, the uses being so varied. In the power plant there was evidence that builders are beginning to agree on systems, this being particularly the case among machines on exhibition, a great majority of which were of American manufacture.

Digitized by Google

Something new can always be looked for from the accessory makers, and in that line the exhibition did not fall behind its predecessors. In tires, lamps, magnetos, air pumps, horns and other essentials to the fully equipped automobile there were numberless minor innovations claiming attention from the thousands who thronged the hall.

Tires.

There appeared to be nothing especially new this year in tires, but the claim is general by tire firms that in point of durability their products will show to better advantage next year than ever before. A constant study of rubber is kept up by the tire makers, and experiments are at all times under way in the effort to discover how greater satisfaction may be obtained by the users of their goods. The desired result, it is claimed, is being brought about. Road improvement has brought in its train lighter construction of cars, and the natural result has been a lengthening in the life of tires.

Lamps formed one of the most interesting exhibits in the accessories department of the show. They were in all shapes and sizes, and there are many little improvements this year that were not seen at the last shows. Lamps, however, are a source of very little worry to the automobilist, any ordinary type giving nearly complete satisfaction.

In general, the tendency for 1909 is very much toward motor vehicles for the masses. The lighter weights, larger wheels and tires, the simpler and more serviceable constructions and many detail improvements will make this show of interest to larger numbers of people by far than any previous exhibition.

A canvass of the trade shows that a very profitable year is generally anticipated. The automobile industry was the first to feel the effects of the financial panic of 1907, and the depression was marked during the first nine months of last year. Business has been improving recently, however, especially since the announcements of specifications for 1909 models, and, in some cases, their exhibition in salesrooms. In the number of sales booked there is no comparison between this winter and last, some of the more prominent manufacturers haing sold to date a large part of their prospective output for this year. In every way the Palace show appears to be the forerunner of a season of prosperity for the maker of automobiles.

IMPORTANCE OF MOTOR CAR BODY BUILDING.

Subject to Great Strain—Average Frame Must Also Act as Truss to Support Constant Demands of External Weight.

One of the most important branches of the complex automobile industry is undoubtedly that connected with the car body. When the first gasoline machines made their appearance the questions of comfort, appearance and durability in body work were relatively neglected. There were a few American carriage builders with sufficient foresight to perceive the trend of events, banish their prejudices and meet the demand of the automobile manufacturer and user more than half way.

Wood still plays an important part in high class automobile body work, and if satisfaction is to be given it is essential to employ none but carefully selected and thoroughly dried pieces. For the making of automobile wheels on the artillery plan only the most carefully dried wood, without flaw of any description, should be considered, says Coker F. Clarkson, A. L. A. M., in the N. Y. Herald. One firm claims that up to the present time no accident arising from a faulty wheel produced by it has been reported.

All the wood used is several years old. It is stacked in buildings ventilated by a special system, and packed layer on layer with joists between in order that the drying process can continue evenly. The entire stock is examined every year and turned. At least five years elapse from the entry of a piece of wood into the factory before it is cut up for use.

There is nothing mysterious in good coach work, although it is surprising to find the great number of parts required to build up a limousine or landaulet, the strength of the ironwork and the tremendous number of coats of paint. The paint on a large limousine body weighs much more than the average man would believe—as much as seventy-five pounds and more. The painting and trimming of the car is to a material degree specialized work. Good painting cannot be done on other than a good foundation, with the proper gradation of the several coats of paint and varnish.

The strains to which a motor car body is subjected are greater than and considerably different from those in the case of a horse drawn vehicle. No one engaged in making cabinets, furniture, house or other stationary fittings could have any knowledge derived from the practice of his own business of what is necessary for the automobile.

The framing of the timber, the use of panels not merely as enclosures but as trusses supporting the external framing, the hanging of the doors and provision for the clearance for paint, etc., have to be studied specially. The supposition that springs can give ease of riding when comparatively little attention has been paid to the form or material of the body and its trimmings is responsible for much discomfort.

The mechanical branch of the Association of Licensed Automobile Manufacturers has held meetings with representative carriage makers to see whether the latter can reduce the weight of bodies to any extent, and to interchange ideas on other interesting subjects on which the automobile engineer and the body maker are working.

The Carriage Builders' National Association was founded thirty-five years ago, and over twenty-five years ago established a technical school in New York for the instruction of carriage draughtmen. The idea of this school is to turn out men who can take a draught and work from it; or go back to the bench as workmen, their wages being increased by their technical knowledge—or later on, perhaps, secure employment as draughtsmen distinctively.

One of the obstacles that the automobile and the body maker have to contend with is the man who wants to have a body built that will carry one person with the springs riding easily, in which he can pile eight or ten people and have the springs ride just as easily, which is somewhat like trying to make a linen duster and a fur coat out of the same piece of goods.

The makers of wood automobile bodies will not acknowledge that bodies made of aluminum are lighter than those made of wood, but maintain that the real state of facts is the reverse. The question of metal panels on bodies has another feature besides weight. One of the things that has troubled the carriage manufacturer is cracks and splits in the panels, which aluminum or sheet metal construction eliminates.

The extreme heat and cold of a country are factors to be considered. A body built, for example, in England, France, Germany or Austria, which have moist climates, may last there for years, and give trouble here in steam heated garages, etc., by what is called "opening up." This is one reason why it is customary to kiln dry lumber here, whereas abroad anything but air dried lumber is rare or unknown. Moreover, the kind of wood generally used in this country has a lower co-efficient of contraction and expansion, besides being stiffer. Some body makers use aluminum coated steel for panels, to avoid checking in painting and what is known among painters as "graining out."

As a rule automobile bodies are lighter than a corresponding body on a horse drawn vehicle; for example, the rocker plate and sills of an ordinary landau, which weigh one hundred and sixty pounds, are eliminated in an automobile body.

No doubt people who have built metal automobile bodies up to the present time will in the future use increasingly processes not dreamed of a short time ago for welding parts to make them integral, doing away with the use of rivets, screws, etc. Of course, there has already been much developed in the use of cast aluminum for bodies.

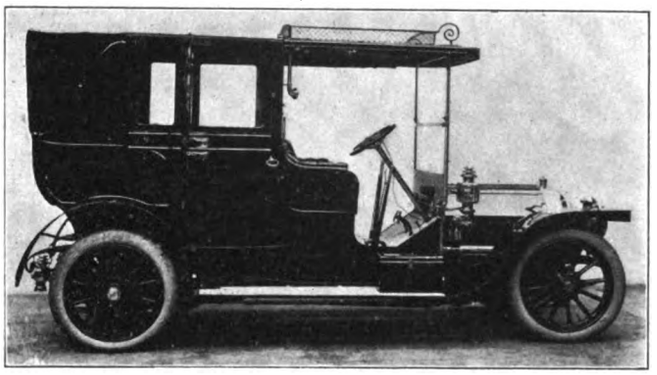
Digitized by Google

Review of Foreign Auto Shows

Specially Prepared for The Hub by Wm. Gilchrist, of London, England

London, England.

The seventh international show has justified its claim to be a representative one, for chassis and completed cars were staged there from all the motor producing countries of the world. The general advance has been decided, greater care in the design of details and in finish, more regard for the comfort of the passengers and an awakening sense on the part of the engineer of the aesthetic possibilities of the motor car have led to improvements, which, though not of great importance in themselves,



Quarter Light Cab Fronted Limousine Landaulet on a Four-Cylinder Renault Chassis, by Wm. Cole & Son, Ltd., London.

have, in the aggregate, amounted to a considerable advance towards the perfect car on the present lines of engine and chassis design.

The introduction in this country, with some fluorish of trumpets, of the Knight sleeve and port engine has not been accompanied with any alteration in the outline or proportion of the car, and for the purpose of giving greater space for the carriage, the innovation may be dismissed for the present.

The downward sweeped chassis frame, seen three years ago on the continent and subsequently in England, has not been the success expected, due in a large measure to the ill-arranged design. The sweep was not placed at the most convenient place for either a single seated body or one to accommodate four or five persons in the interior, and as there were different ideas as to the correct position for the steering wheel and the rake of the pillar, the driving seat was sometimes too far forward and frequently so far behind as to be over the curve of the frame. This displacement of the weight and strength caused the body to yield and the doors to close and otherwise give trouble. For certain styles of carriage this form of frame is most suitable, but it requires making in a variety of sizes and forms suitable for the different styles of carriage body, and this appeared to be beyond the designers, and the sweeped chassis frame has entirely disappeared from the showrooms of the manufacturer.

The makers have kept the straight frames with the hind portion curved over the hind axle, the frame being kept as low as possible for the step. This straight, low frame has advantages for the enclosed car which has to be made much higher than was usual, for the accommodation of the present fashion in ladies' hats. The roof of the car is not so high from the ground but the driving seat is low and insignificant looking, when considering the whole design of the car. The chassis designers do not appear to have grasped the fact that there is a great difference in the appearance of the open car and the closed one, and that what may be the most desirable form of chassis for one is not necessarily the best for the other. As a consequence the designs frequently lack completeness and are often incongruous. This would not be the case if the chassis and carriage were considered together as a complete motor carriage.

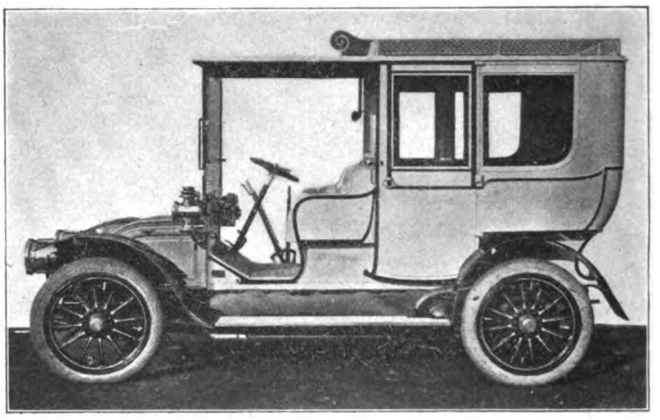
There is not at present any extension of the principle of making the chassis and carriage body one unit. This is still the monopoly of the Lanchester company. There are great possibilities here for an original thinker who is practical in his methods.

There are a few departures from the conventional exhibited, but they have some defects or other on the practical side which will develop sooner or later unless altered.

The Pilgrims' Way Motor Company has introduced a front axle-driven car which is fitted with a double set of brakes. The front wheels are also the steering ones. There is a noticeable absence of complications about this little runabout, and great possibilities for its extension are contained in the idea.

In the hanging up of the chassis upon the springs and the patterns of these most necessary mechanical parts of the chassis, there is as great a variety of practice as before. In a paper read before the Institute of Automobile Engineers in June, 1907, the writer drew attention to this point, especially with reference to the hanging of the hind axle of a car with a cardan shaft drive. It was there pointed out that it was not good practice to attach the hind axle to the chassis frame by the front ends of the side springs or by tension rods which terminated at any other point than one in line with the forward center of the cardan shaft. Two years ago there were not any firms where the correct method of attaching the hind axle to the chassis was adopted. The makers all differed in their practice.

In the recently closed exhibition there were a large number of manufacturers who had recognized that the correct method was to attach the hind axle by means of torsion and tension rods, having common centers or in parallel. This leaves the side springs free to do their own work, to the great advantage



Medium Sized Limousine on a Charron Chassis, by Hooper & Co., London.

of the comfort of the passengers. The combined shaft cover toque and tension rod is popular, but insufficient to ensure the constant true alignment of the hind axle.

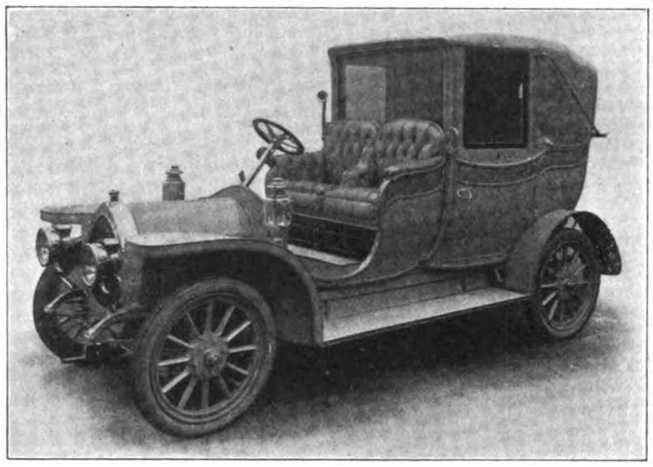
Springs More Eccentric than Practical.

The form of the springs which were to be seen were often more eccentric than directly practical, and appeared to have originated in the desire for something novel rather than as the

Digitized by Google

result of experience in practice. A practice has commenced of making the hind springs for a motor car with plates of one thickness for the back, and three or four longer plates and of a much thinner steel for the shorter plates. What particular reason there may be for this, it would be difficult to ascertain. One of the greatest authorities on fine balance and measuring springs for electrical and other delicate work has stated that the laminated spring is not a reliable measuring instrument, and that the shorter plates should be thinner, so that all may be subject to an equal stress under load. As the strength of the individual plates is as their length, if the cross section be equal in all cases, the logical sequence of this would be that each plate should be thinner than the next longest plate, and proportioned in length, so that each plate would bear an equal weight. For example, if the back plate of a spring will carry a load, without permanent set, of 200 lbs., all the other plates should carry 200 lbs., neither more or less, and in this way the strength of the spring could be ascertained, and the spring depress and rebound equally throughout its length and depth. Practical experience of road transport has shown, however, that a spring so made would give very inferior service, for it would not yield sufficiently for light loads and too much for excessive loads.

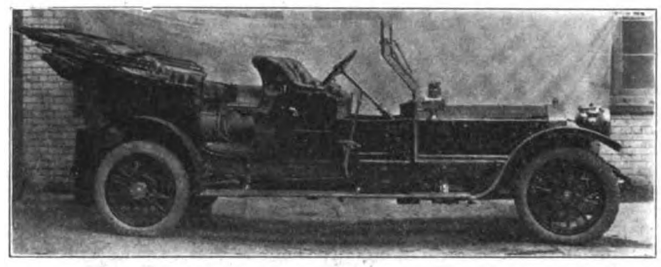
The object of making a laminated spring is to obtain equal ease in the vehicle with a light and a heavy load, and this can



Ladies' Driving Double Victoria on an Adams Chassis. by Mulliner, Long Acre.

only be accomplished by making the spring in such a manner that as the load increases the deflection decreases. The spring is a combination of plates, the individual strength of which increases in proportion to its length, and if the length of each plate is correctly proportioned to the total length, the shorter plates, when there are five or six plates, do not begin to be affected by the load until the lighter ends of the spring are nearly straight. If the spring is not made correctly, or the plates are ill-fitted and of insufficient and unequal temper or thickness, it will not answer this test. A coil or helical spring, being of equal substance throughout its length, practically one plate, will, if it is correctly made, invariably yield an equal distance for equal loads. That is, if a helical spring will yield, under compression, one inch for a load of 14 lbs., it will yield an inch for each additional 14 lbs. of load until completely compressed, but a laminated spring being built up of a number of plates of gradually increasing strength does not yield in an exactly similar manner.

There are a number of new sizes of cars under 20 horse power, the Napier Company putting on the market a 15 horse power to which has been fitted a worm drive, following the practice of the Lanchester, Dennis & New Engine Company's systems in this matter. A new change speed gear, introduced to the public some eighteen months ago, has been further developed and combined with a new engine suspension on the frame. This is the Humphries. A disc is provided in the differential case, with a series of concentric rings of tapered holes, and on the driving shaft is a sliding block having pins corresponding in distance apart to the holes. By a clever arrangement the disc is moved on the cross axle shaft away from the driving shaft, and the block is moved towards the center or the circumference of the disc; the pins engage in the holes of any of the concentric rings



Large Touring Phaeton, to Seat Seven Passengers, on a Six-Cylinder Rolls Royce Chassis, by Barker & Co., London.

and thus transmit the drive to the axle at desired ratio of speed to the driving shaft. This combination of the gear box and differential is lighter than the old method.

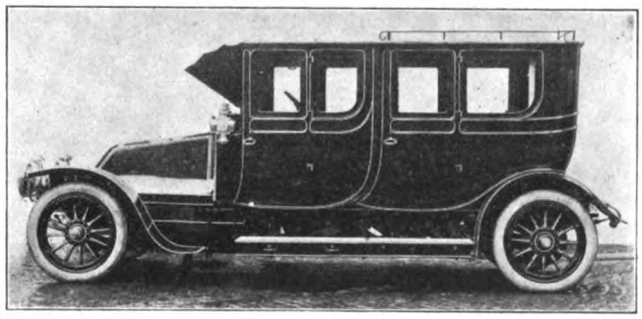
The Sheffield Simplex has combined the gear box and differential on the hind axle and reduced the number of changes and the weight. They vary the speed of the car by alterations in the admission of gas to the engine and others reduce power. Variations of speed, by controlling the quantity of gas, is obtained by many firms by various methods. These are all improvements which are in the direction of increasing the efficiency and usefulness of the motor carriage, although there is great room for improvement before it can be said that the perfect motor carriage is placed before the public.

Nothing Startling in Carriage Design.

In the design of the carriage work, as generally interpreted by the motor manufacturer, there is nothing of any startling nature. The great majority of the cars exhibited were fitted with quarter light limousine landaulets, of which the two illustrations give the keynote to all the varieties of differences in detail of outline. The single seat landaulet with a plain leather quarter was in the minority. A very large number of this type has been placed on the streets of London and elsewhere, and the private user has dropped the style.

Occasional Seats.

There are being introduced very successfully where the chassis will admit of it, D fronted landaulets, when the front is about

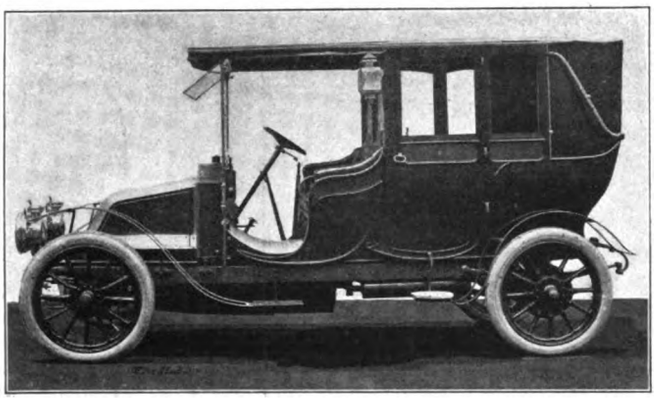


Enclosed Front Limousine, to Seat Seven Passengers, on a Six-Cylinder Renault Chassis, by Cockshoot & Co., Manchester.

six inches in front of the door pillar. This gives room for the occasional seats to be folded up clear of the doorway a very important point. This disposal of the occasional seats is a matter of importance, for if they are folded behind the door, against the sides, they incommode the occupants of the hind seat, and if they are folded against the front, the present style, they stand out some five or six inches from the lining boards and

Digitized by Google

into the doorway. This has been got over in two ways, the D front and by folding up the seat and sliding it underneath. This necessitates sufficient depth from the fence rail to take the seat and glass frame. There are a variety of patterns of folding seats. Some fold up into the upholstery, others down to the floor. Some are for one direction only, back to the driver, others are reversible or set at an angle. Many have a folding back rest, which opens against the door as a protection or rest as the occupant faces inside or across the car. These seats, without any disparagement of individual efforts to solve the



Quarter Light Limousine Landaulet on a Gladiator Chassis, by The Regent Carriage Co., Ltd.

mechanical difficulties, cannot be otherwise described than altogether inadequate in accommodation. An occasional seat should be, as its name implies, for mere convenience, but by the position of the hind wheel the chassis manufacturer enforces the performance of this makeshift arrangement of the seating accommodation.

The Chassis Gives Carriage Building Greater Scope.

The chassis frame remaining generally as it was last year, there has been a better opportunity for the carriage builder to find more suitable sizes of chassis for the desired accommodation, and the designs produced have harmonized in a greater degree than hitherto. The illustrations which are reproduced show this, and they are typical of the general style of the work of the carriage building firms.

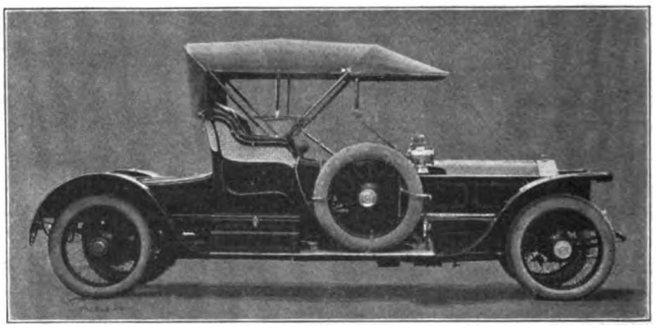
In open phaetons the double-seated touring phaeton continues to be a great favorite, and the illustration of the Barker body is one of the best examples of the large type fitted to a six-cylinder chassis. The door opens on the front pillar, and there is a square entrance to the interior. Two very cleverly arranged occasional seats are fitted to the front of the interior. These are supported on uprights, which hold the seat in position when it is tilted up or dropped down on the back edge. The illustration shows the further seat in position for use. The cape cart hood when open extends over the front wind screen. The steering pillar is in the makers' special "new owner's" position, and the front seats are made very deep and comfortable.

The smaller sized touring car, by Morgan & Co., is typical of the great majority of those in use by men of moderate means. The Adler car in the recent reliability trials showed that it was capable of maintaining a high record for reliability and speed, and the carriage work, which has been especially designed to suit the type of chassis, shows how ample is the accommodation given. The doors open on the front, and the hind seat is just above the hind axle, keeping the weight within the wheel base. The disposition of the lines of the body and the utilization of the space give evidence of the care in the design. The cape cart hood comes well forward and covers the Cromwell wind shield. This type of phaeton usually is made for five passengers and fitted with the folding hood, which has detachable side curtains.

Another type of touring phaeton which has quite recently become fashionable is the high powered car with a front seat for two passengers and a third seat which is concealed in the sloping hind boot, for a servant or driver. The illustration given is a reproduction of a photograph of one of these cars on a Rolls Royce six-cylinder chassis, fitted complete for the road, and is given to show the design of the body and the cape cart hood. The actual car exhibited at Olympia was made and exhibited by H. J. Mulliner Co., and mounted on a DeDion chassis, but in all other respects was exactly similar. A photograph was unfortunately not taken before the car was sent abroad. The car was finished in the painting and upholstery in an exactly similar manner to that illustrated. The hind seat is made to fold over, both back rest and arms, and then turn down into the boot, laying perfectly level with the outline. There is sufficient seating accommodation, and the sides and back portion of the boot are fitted up as tool cupboards. H. J. Mulliner has specialized in two-seated cars on DeDion chassis from the commencement of the commercial introduction of the motor car, and this design is the latest introduction.

Another type of driving phaeton is one which has been introduced especially for ladies by the Adams Motor Co., and on one of their chassis and exhibited in a very prominent position on their stand was the double-bodied phaeton which Mulliner, Long Acre, had built for it, and which is illustrated. The front seats are made for a lady driving, and are specially designed and upholstered. The interior is also specially designed for ladies, and all the fittings are suitably arranged. The design is entirely novel, and the color, light grey, relieved with light green lines and cane work with art cloth upholstery. The hood leather is enameled in color to match. The appearance of the carriage would have been greatly improved if the hind wheel had been a few inches further back and perfectly clear of the door, where the wheel base is so short the designer of the body is hampered unduly and, as the wheel and mudguard cannot be neglected or left out of the design, sufficient length is very necessary to obtain a perfect outline.

The quarter light limousine landaulets, of which two are illustrated, was one of the most popular types, nearly every one of the stands having one or more examples. The larger car was made by the Regent Carriage Co. and fitted to a Gladiator chassis, and the outline is very clearly indicated, as is also that of the smaller body made and exhibited by Wm. Cole Son, Ltd., on a Renault chassis. The photograph was taken before the car was complete. Unfortunately this car was one of those



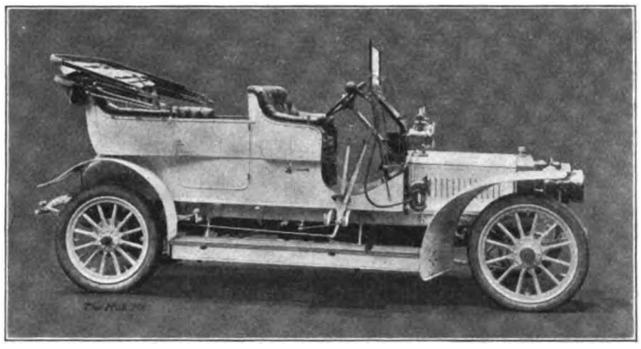
Touring Phaeton with New Design of Body on a Rolls Royce Chassis, by H. J. Mulliner & Co., London.

removed from the show by the S. M. M. T., because there were more than six Renault chassis exhibited, in addition to those on the Renault stand. The car was on the stand for two days. The novelty of the lines and treatment will be noticed. The shape of the mudguard, steps and step covers, the absence of the long side step board, the outline of the body and the balance of the different parts made this motor carriage very noticeable.

The limousine car, whether it is made to open along the side completely or only partially, is a great favorite with those who can keep a large automobile. These large cars are chiefly used

Digitized by Google

as traveling carriages between town and country and for large evening parties. When there are two windows on each hind quarter the hindermost and the large back window are made fixed to exclude the dust and draught. They are generally made in two sizes, one to seat five, six or seven in the interior, and a smaller size, of which an illustration is given, to seat four persons comfortably. The illustration selected is one built by Hooper & Co. for a Charron chassis, and gives an excellent idea of this type of auto carriage. The design is on a short wheel base, too short for appearances, but a compact and comfortable carriage can be arranged.



Medium Size Touring Phaeton on an Adler Chassis, by Morgan & Co., Ltd., London.

A style of auto carriage which has become popular is the enclosed front car, where the owner driver is fully protected. Sometimes these are made with the chariot-shaped front body only. This, of course, has a shorter wheel base than the one illustrated. There are several forms in which this car is finished. Some have the whole of the sides, corners and back in glass, and they may be considered observation cars. They have their drawbacks as well as their advantages. Others are made so that a couch can be formed in the interior. This arrangement of an enclosure of the driving seat has some serious disadvantages, unless the position of the seat, the width of the body, the angle of the windows and the ventilation and protection of the interior from draught are carefully considered. The driver has a certain amount of difficulty in seeing who is overtaking the car or if there is a clear road for turning. This style of car has a very important appearance, but cannot very well become of general use, owing to the necessarily high horse power required.

Color Effects.

The colors selected for the painting of the cars ranged from white to black, although these are not colors in the strict sense. French grey, light blue and green, browns or deep blues and greens were relieved with harmonizing and contrasting colors. There were some fine effects in alternate striping of color, and the underframes were painted in contrasting colors. Canework on some of the panels is popular, and a larger proportion of the finer work is being done by hand. The panels do not appear at their best if the applied cane work is in lines, which do not correspond in direction with the principal lines of the body. It is impossible to attain this when the applied cane work has to turn round a curved panel.

More Art Effects in Interior Finish.

The interiors of the cars are most carefully finished, and the looms of France, Germany, Ireland and England are laid under contribution to obtain the most artistic cloths and laces. The variety of these is almost beyond description. There were more art effects and in greater harmony than in previous years. The small fittings are not quite so elaborate or costly as previously, with the result that the interiors did not have such a decorative appearance. Flower holders fixed in the front window division and at the sides of the doors is an addition, and a practice which has very much to recommend it. For the character of the design, exterior, interior finish and general appropriativeness, the Olympia exhibitioin of 1908 will be placed very high. The exhibits individually and generally were of high merit and very even in quality throughout. There were none of the glaring indiscretions which have appeared from time to time, passing like meteors across the horizon of a quiet exhibition, only to be relegated to the dark corners of a showroom before disappearing in the gloom of an auction gallery.

COACHMAKING SEEN AT THE AUTOMOBILE SALON, PARIS

The large and beautiful building on the Champs Elysees is shorn this year of much of its decorative splendor, both inside and outside. The French authorities have felt that the value of the exhibits, as such, rather than the elaboration of color and light would be the chief attraction, and although, unlike the English show, the avenues were not crowded in the early mornings, they were impassable after the hour of the mid-day meal. The show itself did not strike one as being a notable one. There was nothing new or remarkable, and perhaps in this it was not the less remarkable than some of its predecessors. The large touring phaeton was not very strongly represented. The single-seated landaulet has gone and there were not very many quarter light landaulets. The limousines are more strongly represented than in former years, and in greater variety of design, while the enclosed front car in a great variety of designs was to be found on very many stands. The little single cylinder car was everywhere. Fitted with seats for two and four passengers, it pervaded the salon and impressed visitors with its ubiquity.

In suspension the French are like the English, following each other's practices. Recently they have taken to making the springs nearly flat, and with one-half the plates very thick and the other half, the shorter ones, very thin. This practice appears to be spreading and to have as little foundation in reason as many of the other curious devices which have had to do duty as rear springs. The Cee spring has practically disappeared. A very large number of chassis were fitted with them last year. Only one was seen at this year's exhibition. Some rather curious devices with helical springs in tension and compression, actuated by chains passing over rollers and by other means were to be found amongst the novelties.

The shock absorbers of various patterns were fitted to some of the chassis. These depend largely upon friction for their efficiency, and are placed generally over all the four springs.

The underhung chassis which was shown last year is here again with several different bodies upon it, but it is very low and close to the ground and the body has to be raised in places to clear the transmission so that practically very little is gained in that way, while much greater advantages are lost through the chassis being liable to damage when crossing high banked bridges, etc.

Of the designs of the bodies generally, there is little that is new. Many of them display very fine proportions and well thought out lines, although there are some which will hardly pass for French designing. The return turn-under door pillar has gone, and the best makers have discarded the German straight-front pillar with the turned up toe and volute scroll which has so long disfigured the front of the doors of cars. This form came originally over on the front of a very straight up and down small landaulet, and did not appear to be very much out of place, for it was in keeping with the cramped design. It appeared to some copyists as novel, and was introduced into everything whether appropriate or not, and now it has been

Digitized by Google

discarded and the full brougham front pillar adopted. The toe of this pillar is, in the best work, left clear of the boot side, a practice which greatly improves the appearance and gives it lightness. Where a cabriolet seat is fitted to the front the line of the hind corner pillar of the front cabriolet seat and the front line of the pillars harmonize. The hind quarters are rounded right up to the top and the corner is defined by mouldings to the taste of the draughtsman. The corner is sometimes further defined by a moulding giving a cabriolet outline to the hind quarter.

The finest designs in the Paris salon emanate from the firm of Rothschild, of Rheims and Auscher. These are characterized by a simplicity and dignity of line which many try to copy but none attain. The touring Phaetons follow the lines of the line illustrations which have appeared from time to time. The French automobile carriage builders are making the eventail shaped body and using it as a limousine or single enclosed front body. This shape is only suitable where the whole design, with the position of the hind wheels and mudguard, balances as a complete car. The most suitable position is that of the enclosed front seat without any second seat behind. Here the full lines of the body can be seen, and if the artist exercises restraint and remembers that the occupant of the driver's seat has to see out at the sides as well as forward, a very nice carriage can be evolved. The attempts in this way were not always happy in their results, and some very strange looking designs were staged.

Great ingenuity was displayed in some of the touring cars in the arrangement for storing a luncheon kit, and with good results.

There was nothing new in occasional seats. Very few were so disposed that they were really out of the way. There were more of them exhibited at Olympia than at Paris. The British builders appear to have given greater attention to this matter than their French comperes.

The colors employed were the usual blues, browns, greens and lakes, the general tendency being towards quiet tones. There were some grays and much caning on the panels. The use of woods, clear varnished and finished, is not so great as it was some years ago, although there are many firms which always exhibit an example.

The interiors were almost universally upholstered in drab cord; a few of the smaller limousines were in dark moroccos. No French calf or Russia leather linings were seen. The laces are, as is always the case with the French, in good taste and harmony with the materials, but no new patterns were to be seen. In lamps, a few coach pattern brougham lamps for electric lights were fitted to these carriages which were suitable.

In handles there were many of Louis XVI. pattern, single ended, and the commode handles were also of the same design. The difficulty with these ornate decorations is that there is nothing else about the carriage to harmonize with them; the practice of finishing off the points of the beading with ornamentation has been discontinued and there are no elaborate carvings or delicately run mouldings on the body now as was formerly the case.

Comparing the carriage work of the two exhibitions, the French are ahead in the delicacy of their lines and fine finish, but the English have a distinct lead in boldness of treatment, and a more distinct individuality characterizes their work. Both British and French coach builders are confined in their designs by the outline of the chassis, and the position of the hind wheel determines the characters of the design, for the outline of the enclosing mudguard dominates the whole of the hind part of the body, and when there is a considerable overhang a very unsightly and uncomfortable car may be the result in the end of the coach builders' best efforts.

White Plains Auto Exchange Automobile, White Plains, N. Y.; capital, $1,000; by Louis W. Haight, C. R. Card and others.

GENERAL AUTOMOBILE NOTES.

In purchasing wood alcohol for the cooling system, care should be taken to see that the liquid is free from water as possible.

Do not neglect a "blow" in an engine. It may only be a faulty joint, such as a leaky valve cap, etc., but it may be an internal blow, which means badly-fitting piston rings, or possibly the rings have so moved that the slots are all in line. In any case, an internal blow is very bad, as it causes a carbon deposit to eventually accumulate in the base chamber, and then the big end and main bearings are liable to be scored.

A light-running and noiseless car is always a sign of a good driver who takes pride in his work.

European motor factories, which have had a rather dull twelve months, are again beginning to run full time.

The largest producer of ferro-vanadium, which is being used more and more in the construction of automobiles, is the Societe Anonyme Electrometallurgique Girod, at Albertville, France, which annually manufactures from 5 to 10 tons daily of the alloy, containing from 30 to 52 per cent. of the vanadium.

Viewed from a financial point, automobile racing rivals grand opera and boxing. Wagner received $4,000 cash as winner of the Savannah Grand Prize; Hemery got $2,000, while Nazarro, as third, received $1,000.

The Wilkinsburg Automobile Club, of South Africa, has passed a rule urging its members never to pass a disabled automobile without stopping and offering assistance, and suggesting that "every car should carry a manilla rope, 25 feet long and ¾ inch thick for emergency."

Lieutenant E. H. Shackleton, of the British Navy, has sailed from New Zealand for the Antarctic continent, where he will attempt to reach the South Pole in an automobile built specially for travel over ice fields. The car is expected to cover about twenty-five miles a day. Shackleton expects to return in January, 1910.

Picric acid belongs to the detonator family and when mixed in gasoline, after it is dissolved in alcohol, it increases the rate of flame propagation, resulting in more power. While used occasionally for racing events, it presents one serious drawback it tends to destroy the walls of the cylinders.

The secret of preserving tires is to keep them well inflated—30 pounds pressure—the favorite with women motorists because of easy riding—is entirely too low; 50 is still better, but 90 pounds, the amount recommended by most tire makers, will save wear and tear to a much greater extent.

To prevent the setting fast of the adjusting screws of radius and brake rods, screwed valve caps and other stationary parts exposed to moisture or heat, the threads, both internal and external, should be lubricated with mercurial ointment, which should not be touched with the fingers.

Everywhere can be observed the tendency towards reduction of noise. Just a year ago engine flexibility and the perfection of the lubrication system were the aims of the designer, so now noiselessness is the feature on which greatest stress is laid.

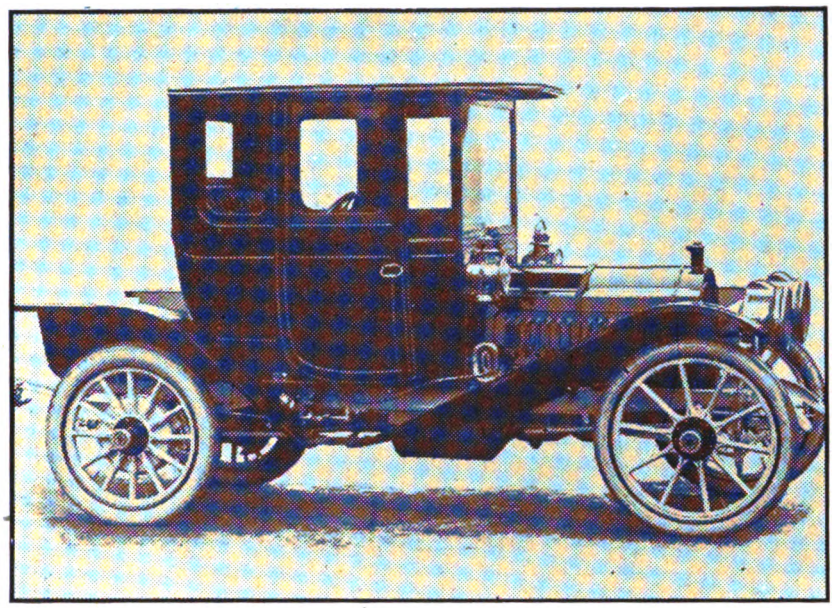
Castor oil lubrication, inaugurated this year, will certainly generalize next season as favoring the enormous piston speeds aimed at. The cost of it is such that it will only be used in the very last days of practice and on the race days.

The proper urgent for the cupped leather washer of a tire pump piston is vaseline. Oil is too thin and it tends to work into the rubber hose, and even into the tire itself if too much is used.

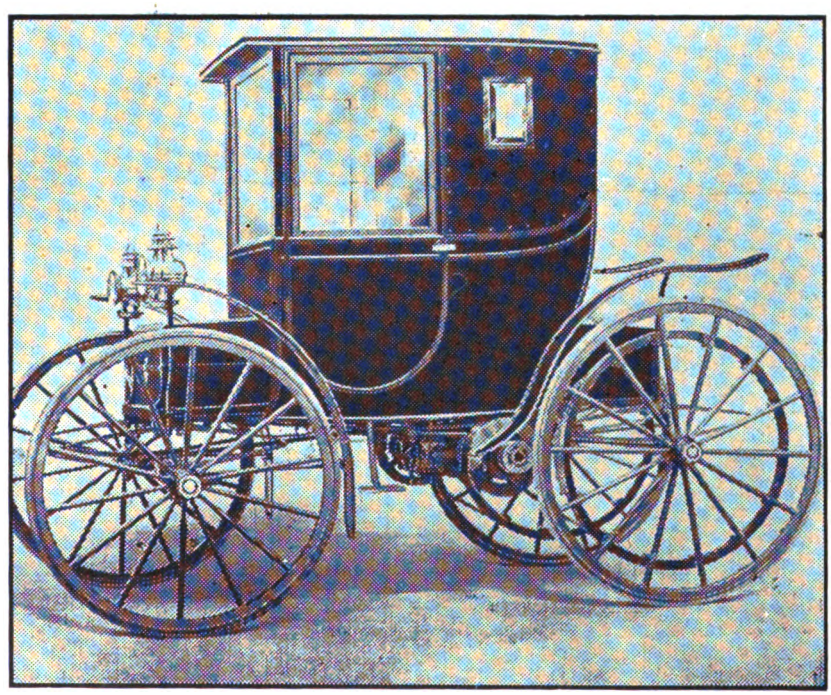
Experiments are being made in Calcutta, India, with an air-propeller petrol-driven car. The secret of the mechanism lies in the pattern of the propeller. A speed of fifteen miles an hour has been attained on Calcutta roads with a 5-horsepower engine. The absence of wear on the tires is most marked, and the motion is perfectly smooth. At present the invention is just passing out of the experimental stage, but it is anticipated that it will shortly be possible to place cars on the market.

Digitized by Google

Illustrated Automobile Section, January, 1909



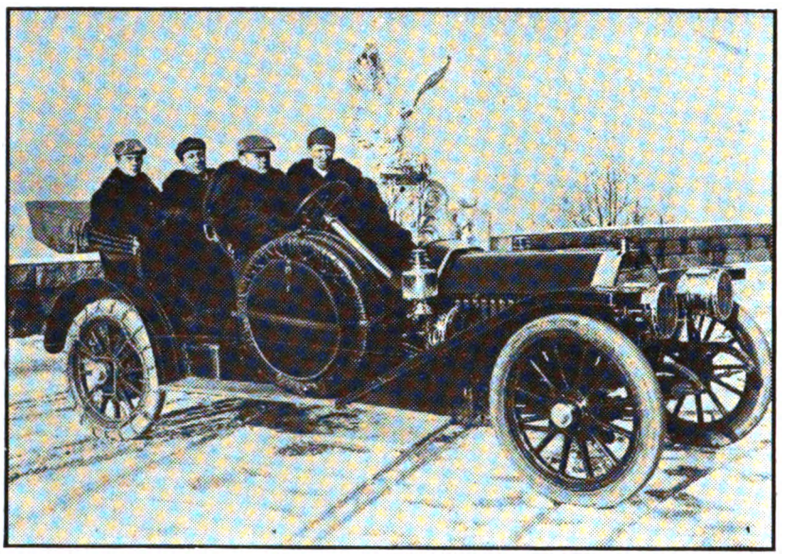
TOWN TYPE PACKARD WITH INSIDE STEERING DESIGN.



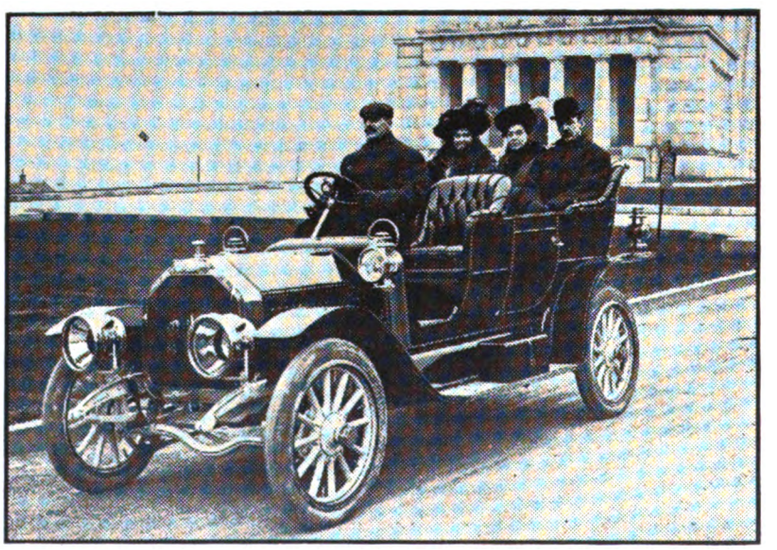
HOLSMAN TYPE ENCLOSED MOTOR BUGGY.

Motor Cars Shown at A. M. C. M. A. New York Exhibit

Digitized by Google



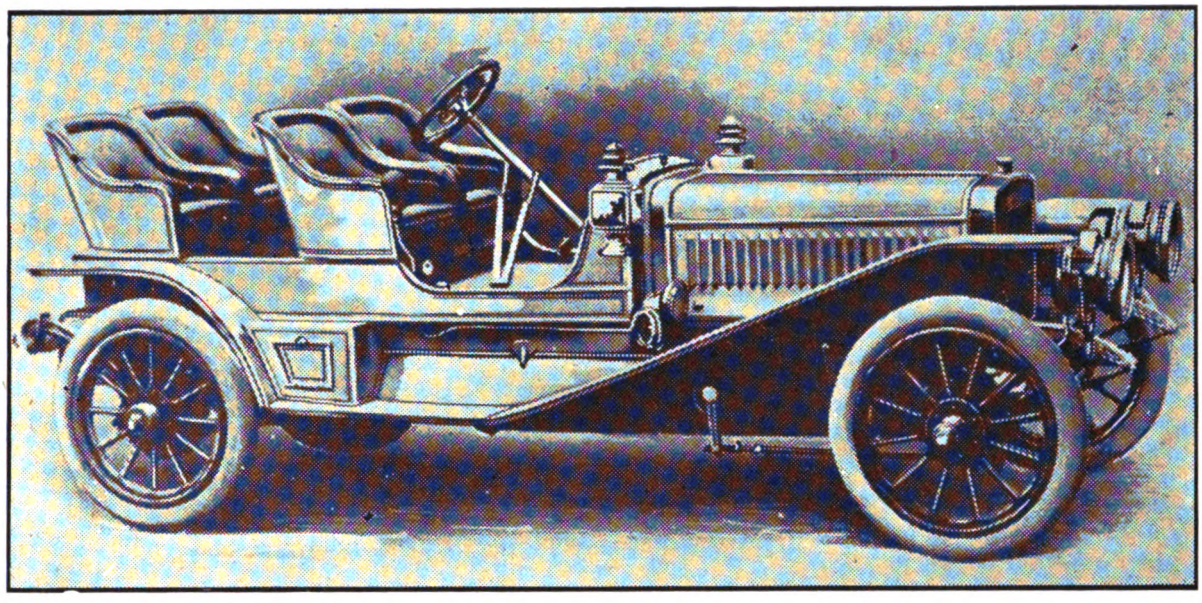
NEW 1909 SHAFT-DRIVEN LIGHT LOCOMOBILE



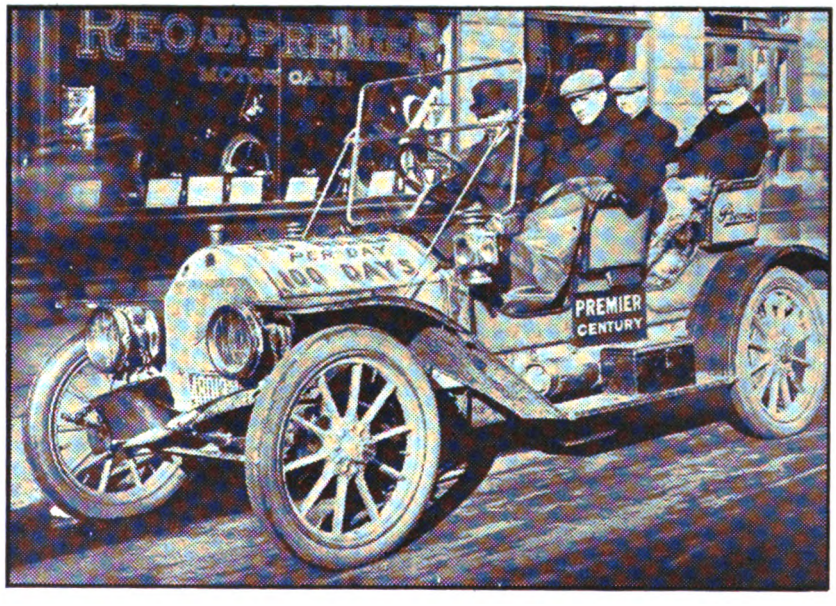
NEW MODEL "17" BUICK.

Motor Cars Shown at A. M. C. M. A. New York Exhibit

Digitized by Google



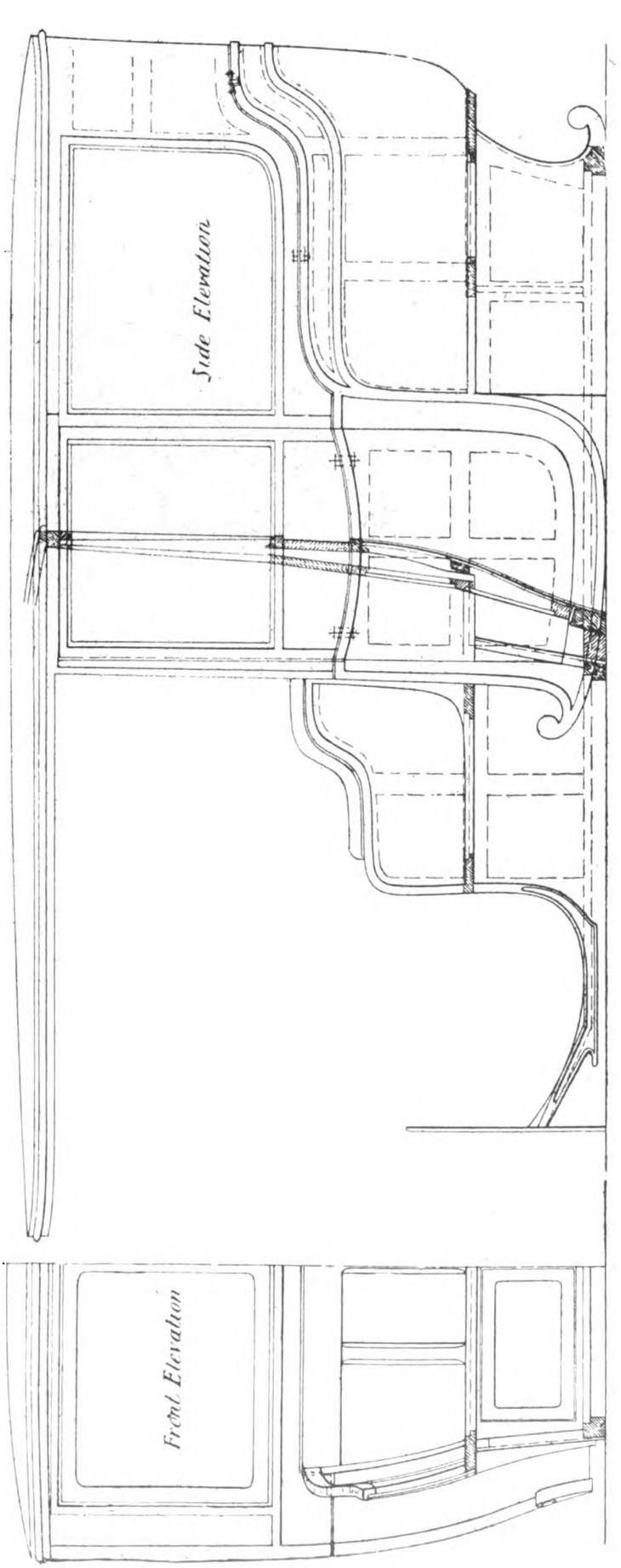
SIX-CYLINDER WINTON ROADSTER.

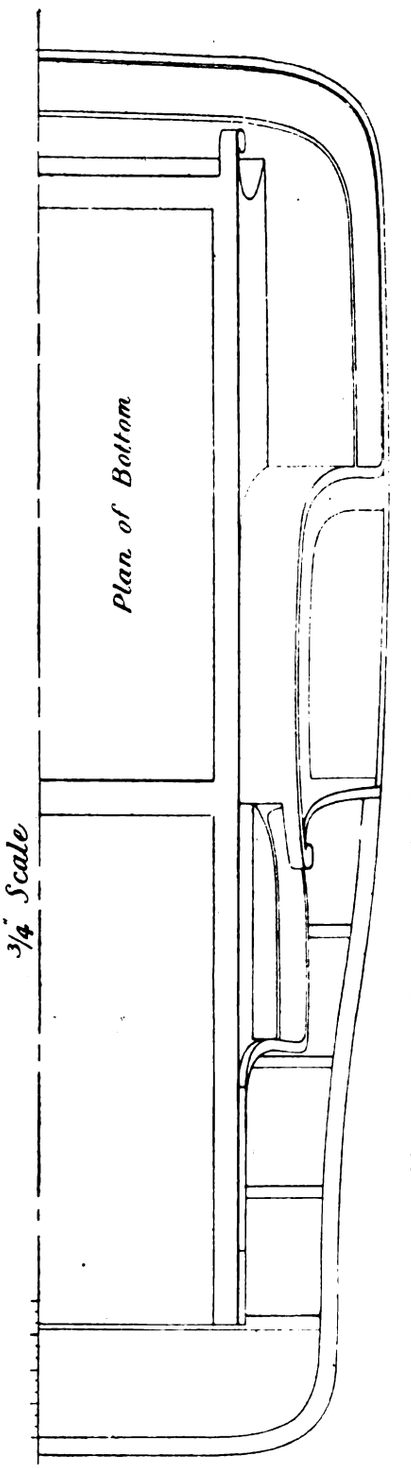


PREMIER; 100 MILES A DAY FOR 100 DAYS.

Motor Cars Shown at A. M. C. M. A. New York Exhibit

Digitized by Google





Working Draft of Limousine, with Detachable Top.

Described on opposite page.

Digitized by Google

Body Construction and Finish

PHAETON LIMOUSINE WITH REMOVABLE TOP

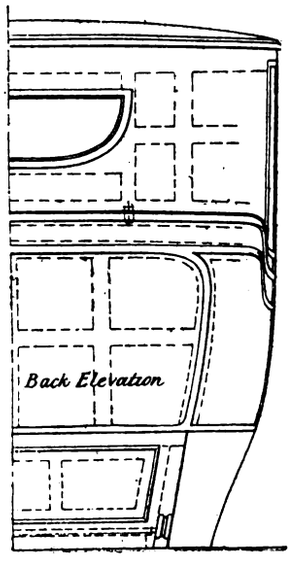
From the Motor Car Manufacturers' Art Journal (London).

Drawings on opposite page.

Following the time of year, we show here a phaeton Limousine with removable top, and this body can be used as a limousine or as a phaeton. The body is to be fitted on a chassis with 8 ft. 6 in. body building space.

In proportion to the short chassis the body has commodious seating accommodation, viz.: Inside on the back seat there is room for three persons and on the turn-up seats two, and on the driver's seat also two, altogether there is ample seat room for seven persons.

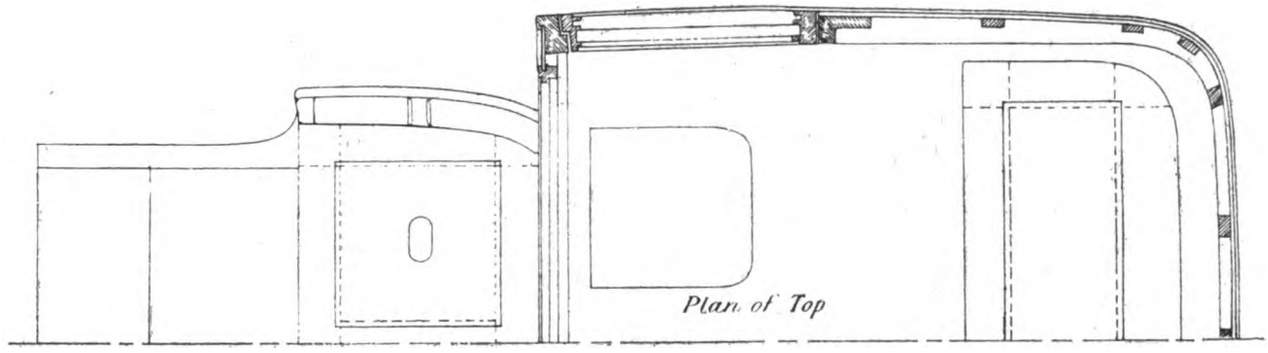
The general constructions are shown in the near side elevation. The lower well is made of ½ in. panel with 2 in. by 1 in. cross pieces inside, glued and screwed to the bottom frame. The bottom frame is 2½ in. by 2¼ in., and the cross pieces 2 in. by 2¼ in., and one 2½ in. by 3 in.; the bottom frame as well as the cross pieces are rebated out for the floor-boards, which are ¾ in. The driver's seat is made of panel and inside glued cross pieces, covered with glued on canvas. The seat frame is made



4 in. by 1 in. and filled up with ½ in. plank. The front pillar of the door is 3 in. by 3¾ in., and the back one 5 in. by 2½ in. The construction in detail is given in the section of the door. The rear seat construction is of panel, and as usual the inside cross pieces, but are specially made stronger than usual, as the fastening of the top takes more room than in a limousine without removable top. In the back elevation the panel is made in one and bent over the inside cross pieces. The front window behind the driver is made to drop down and also the door windows. The fastening of the top is made by screwed plates fixed to the top and with a bolt screw fixed to the lower part, there are eight plates with screws and two bolts in sockets to secure the top from moving over the side.

In this design are the characteristic double moulding from the back of the door pillar and round the back, in harmoniously curved lines. The round top rail of the door is also in good proportion to the other sweeps.

In this darwing is shown the side, the front, the back elevation, and also the plan of the top and the bottom and a section of the door.



The principal dimensions are: Length of body set off on chassis, 8 ft. 6 in.; length from dash to driver's seat, 2 ft.; length of front body on seat line, 1 ft. 9½ in. Width of door, 2 ft. Length of hind quarter from hinge pillar on elbow line, 3 ft. 4 in.; length of hind seat, 1 ft. 9 in. Depth of rocker, 1 ft. 1¾ in.; depth of hind body in center over mouldings, 1 ft. 6½ in.; depth of hind body at turn up of elbow, 2 ft. 2 in.; depth of door in center, 1 ft. 11 in.; depth of front body in center, 11½ in.. depth of front body at back, 1 ft. 5½ in.; depth from floor to top of head on side, 5 ft. Compass of head in center, 2½ in. Length of extension canopy, 4 ft. 10 in. Distance from dash to front hind wheel, 5 ft. 11½ in. Depth of door rail in center, 8 in.

Front elevation—Width across pillar at top, 5 ft. 1 in.; width across pillar at back of driver's seat, 5 ft.; width across the toe of pillar, 4 ft. 2 in.

Back elevation—Depth of back panel in center over mouldings, 2 ft. 2 in.; depth from top of panel to head in center, 2 ft. 10½ in. Width across top over all, 5 ft. 3 in.; width across top at turn up of elbow line over all, 5 ft. 2 in.; width across top at seat line over all, 4 ft. 9 in.; width across rocker at top, 3 ft. 5 in.; width across rocker at bottom, 3 ft.

DISTRIBUTION OF WEIGHT.

It is seldom that the average automobile owner can tell how the weight of his car is distributed. A table prepared recently by the George N. Pierce Company, of Buffalo, gives a close insight into this matter so far as Pierce-Arrow cars are concerned and will help owners of other cars to some extent.

Among the equipments not generally included by manufacturers are these articles and their weights: Shock absorber, 28 pounds; odometer and fittings, 2 pounds; foot rest, 7 pounds; robe rail and brackets, 5 pounds; dash cabinets, 3 pounds; luggage carrier in rear, 17 pounds; tool box in rear under frame, 26 pounds; sprag, 12 pounds; rubber bumpers, 5 pounds; rear axle straps, 2 pounds; gasoline gauge, 1 pound; total, 124 pounds.

Digitized by Google

ABOUT AUTOMOBILE SPRING SUSPENSION.

By Thomas J. Fay President Society of Automobile Engineers

(Continued from December Hub.)

In spring making there are matters to be considered as follows: The materials of which the springs should be made; the facilities for use in fashioning the spring plates; the facilities for use in heat-treating the spring plates; the design of the springs with a view to the work to be done; the manner in which the springs shall be tested. As respects the materials, enough is to say they will be given separate space hereafter. When it comes to the question of the facilities for use, in fashioning the spring plates, it will be easier to state what should not be done rather than to elaborate upon the other phase of the question. At all events, the material comes in mill lengths, and the leaves or plates have to be cut from this material, so that the first thing to consider is whether or not the texture of the material is altered by the shearing process used in cutting the spring plates from the lengths as they come from the mill. The author is of the opinion that the texture of the material is altered for perhaps a full half inch back from the point of shear, and so it would

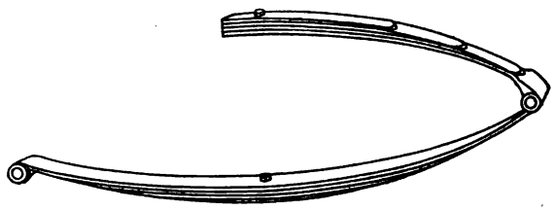


Fig. 5—Three-quarter elliptic spring.

seem that the lengths as cut from the mill lengths to make the leaves should be somewhat longer than will be required in the actual finished product.

The next question to be taken into account is that involving the thickness of the leaves in a given spring. Shall all leaves be of one thickness, or shall we have all of one thickness, excepting the main leaf, which might be of a greater thickness, or shall all the leaves be of a different thickness? The spring maker will have his say, because he sells the springs by the pound and because the more plates he has to handle per pound the more work he will have to do per dollar. If the spring maker fixes the pound price first he will then be inclined to fix upon the least possible number of leaves for the spring, thus giving him the maximum weight for the minimum cost, hence increasing his profit at a previously fixed price.

It is not intended to say that spring makers deliberately start out with the idea of "skinning," but it is believed that they may beguile themselves into thinking that the less the number of plates in a given spring the less the chance of breakage for that reason alone. Of course, they know that for a given camber, the

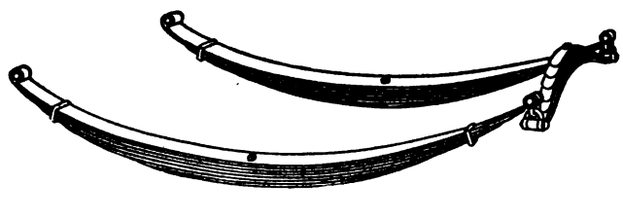


Fig. 6—Characteristic platform-type spring.

thicker the leaf the greater will be the extreme fibre strain, and with them it is a compromise as between cost and risk of breakage, due to overstepping the bounds from a fibre strain point of view. The same spring makers are justified in their course to some extent, for the reason that easy riding qualities are more nearly approached as the fibre strain in the material used more nearly approaches the elastic limit of that material. The danger lies in exceeding the point of safety, from the point of view of kinetic ability of the steel used.

Life of a spring is forecast by the maker thereof, almost independently of the quality of the material. If the spring is limber and it is so placed as to indicate spring play, just at the point of reversals of camber, the life will be shortened. The superior grades of materials will stand this abuse for a comparatively long time, but the dynamic life of steel, like the life of every other animated thing, is limited. Inferior materials, advantageously situated, might last far longer than the superior products working at a disadvantage. The initial camber to give a spring for a given static camber, is a problem for the spring maker.

Figs. 8, 9 and 10 show three views of a given spring, under the conditions as follows: Fig. 8 shows the spring under static load,

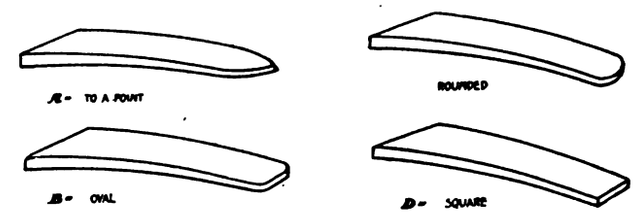


Fig. 7—Four customary types of end trimmings.

indicating the static camber; Fig. 9, straightened out under load; Fig. 10, in reverse camber, in a testing machine, to the limit before permanent set.

It is worth while to study these three conditions in relation to springs, because they have to do with the life of the spring in service, and the easy riding qualities of the car due to spring action. It might be said in general that the greater the difference between the initial and the static camber, the more pronounced will be the easy riding qualities, and it might be said as well that the greater the initial camber and the greater the possible reverse camber, the better will be the life of the springs, especially if we take into account that the spring action in service will be limited between the two points, as represented by the initial camber on the one hand and the condition in Fig. 9, which means that the spring leaves will no more than straighten out in actual service. If the service conditions are such as to eliminate any reversal of camber, then it may be said the factor of safety will be represented by the amount of the reverse camber in a testing machine before permanent set.

If springs are limited in their application to the conditions as before given, even though these conditions may be regarded as

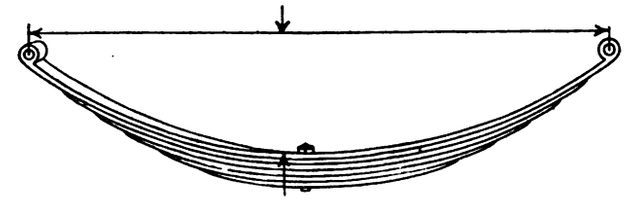


Fig. 8—The spring under static load.

favorable, it may still be said of the springs that their life is limited. The life, in fact, under a fixed set of conditions, will depend entirely upon the kinetic ability of the materials used—dynamic qualities of the steel. This is a matter that has been exploited at some length in the press and on the marts of steel, but to almost no purpose, since, forsooth, springs do break and the breakages are not limited to the kind that are cheap and claimed to be non-dynamic in their character.

At the present time every particle of steel that goes into every automobile, regardless of price, is said to be of a dynamic character and toughened by a "special process" whether it is or not. It is rather to be feared then that this word "dynamic" has been relegated to a low estate. Notwithstanding the apparent tendency to class everything by way of steel that finds its way into cars as the very best obtainable, the fact remains that some of the material is truly good, and when it comes to the material for springs, which is the affair of the hour, kinetic qualities are those desired, if the life of the springs shall be long, provided the

Digitized by Google

easy riding qualities are present in the spring suspension. This must be so, since, as before stated, easy riding qualities are present if the steel is subjected to a fiber strain not far from the elastic limit, and so it follows that steel flexed repeatedly and continuously, under conditions nearly approaching the elastic limit, will not last long unless it is of a character extremely kinetic.

The exact physical properties of the several grades of steel will be accorded a due measure of attention in connection with the part of this article specifically dealing with materials. For the present it will be well to consider one or two other points. For instance, a laminated spring of the flat plate variety must be so designed that each one of the leaves, regardless of their lengths, will be subjected to exactly the same fiber strain as its neighbor for the respective conditions of camber. This is rarely absolutely true, and the conditions here imposed are oftentimes violated, proof of which lies in the fact that plates will break out of the middle of a spring and the spring will work better without the broken plate than it ever did before. This merely illustrates the fact that the broken plate was doing nearly all the work and served for the most part as a mischief maker, merely because the broken plate was given a greater initial camber than the occasion demanded. Mathematically and in practice, if the spring plates are all of the same thickness they should all be bowed to the same radius, and if they are so bowed the fiber strain will be the same in all for every condition of camber to which they are all treated.

It is easy enough in practice to fix the initial camber for the various lengths of plates, if they are all of the same thickness, since they can all pass through the same bending roll, if they are



Fig. 9—The spring straightened out under load.

all to be of the same radius. This is not to say that the best springs will some from the practice of making all of the leaves the one thickness, since it would be possible to get more work out of the springs were the leaves decreasing in thickness as they shorten. With decreasing thickness of leaves we may have increasing camber as they shorten, hence increasing pressure and greater work. It may not be generally understood, and it may be well to point out, that the efficiency of a spring is measured by its ability to transform energy. This was intimated in the entering chapter, but we can go a little farther and say that the spring action is even at the expense of the power of the motor, and the more power the springs will absorb the easier will be the riding qualities of the springs. What is wanted in a spring is the ability to destroy the energy of the moving mass insofar as it can, by way of defeating easy riding qualities. We do not wish to have this energy destroyed instantly, but rather at an increasing rate for each increment of travel. We accomplish this more perfectly if the spring plates are made thin as they are made short.

There is no actual limit to any type of spring, from the mere point of view incidental to indifferent service; if, however, easy riding qualities are desired, or, if spring failures are to be eliminated, it is then that limitations of the types will have to be considered. Take, for instance, the helical spring, placed in such a way as to take care of the vertical bounce of the body, and it is plain to be seen the spring may snub the load within the required limits of travel, but the pendulum action will be at a high periodicity. Obviously, it would be disagreeable riding under such conditions, because the number of oscillations of the body would be very high indeed. It was found in practice that this very low priced and practically unbreakable type of spring could not be utilized, because it engendered extremely disagreeable motions.

The concord type of spring, used extensively in connection with the little Oldsmobile, known in the Far West as the "buckboard type," is probably the most easy riding spring extant. It has always been used in connection with short wheelbase vehicles, and its limitation is that due to wheelbase. The successful application of this type of spring has nearly always been in connection with vehicles of a wheelbase not exceeding 72 inches and now that automobiles, even of the runabout type, are designed with the wheelbase considerably exceeding 72 inches in nearly every case, this type has become almost obsolete.

In the cars of the time it is a question of laminated plate springs, full, three-quarter, or half elliptical, as the exigencies of the service would seem to demand. Designers split on these differences, and some designers resort to the scroll as a further means of engendering easy riding qualities. The author has had occasion to observe road performance in automobiles in connection with racing cars, and as this road performance relates to the more important types of touring cars, these observations have invariably resulted in the conclusion that full elliptical springs in rear, with a scroll top section and rather stiff lower section, would more nearly afford a level platform than might be obtained in any other way. Next to the full elliptical top scroll rear spring, it is possible that the three-quarter elliptical scroll quarter would afford more nearly the perfection desired. Unfortunately, these types of springs do not readily lend themselves to the design of cars, if a low center of gravity is sought, and certainly a low center of gravity is of the utmost importance.

From the point of view of types of spring, the tendency may be to disregard the condition of service, and regard the type as dominant. It is not absolutely necessary to resort to the use of full or three-quarter elliptical rear springs, because the application of skill will render it possible to obtain easy riding qualities with the half elliptical springs in the rear in connection with cars with a low center of gravity and devoid of over much top hamper. The question of where the weight is placed is quite as important as the result of the center of gravity. For instance, in limousine the resolved center of gravity can be low enough to escape criticism; even so, a considerable proportion of the weight can be concentrated high above the base line, and that proportion of the weight will be in evidence, by way of excessive "heel" when the car is doing a curve. Flywheels, for instance, have their weights concentrated at the rims, because the flywheel effect is the maximum under such conditions, but the center of gravity of a flywheel, if it is kinetically balanced, will be at axis of rotation. This same phenomenon can creep into body work, and it is plain that center of gravity is not all to be watched.

The spring performance will only be up to the springs as a matter of design, if the design of the car as a whole will render it possible to take advantage of the good qualities of springs. Under proper condition the half elliptical type of spring will

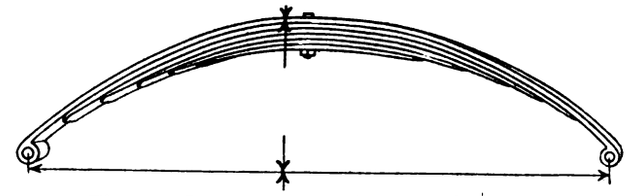


Fig. 10—Reversal of camber to point of set.

afford easy riding qualities, and a periodicity of the oscillations said to be agreeable by even the most fastidious. A modification of the half elliptical spring is that known as the platform type of spring, in which, in addition to the two half elliptical springs in the fore and aft plane, a third half elliptical member is placed in a lateral position, suspended from the after end of the two half elliptical members above referred to.

If top hamper causes lateral heeling in connection with the half elliptical springs, except in an ordinary way, this disagreeable property is far more noticeable in connection with the platform type of springs. The body is suspended to the lateral member of the platform members, and the spring action is there-

Digitized by Google

fore that which would engender lateral rolling if very much of the total weight is above the chassis frame. On the other hand, platform springs when properly designed and suitably placed, afford the very easy riding so much to be desired in connection with the road performance of automobiles.

Up to the present time we have made no mention of the spring suspension at the front end of cars. At the front end the problem is different, because there the load is almost constant. If the motor is placed in the front the load will be scarcely varied at all, due to the presence or not of another person besides the chauffeur in the remaining front seat. With the motor in front the chauffeur's position is so far back in the direction of the rear spring suspension that the difference of one person but little affects the weight actually resting upon the front springs. In front, then, it is very possible to take advantage of the half elliptical type of springs, since they lend themselves perfectly in every case, if only the weight is constant and the springs are designed taking that weight into account. In a very few cases the three-quarter elliptical springs have been used in front, and, while there is no great objection to the use of this type of spring under the conditions involving a constant load, there is a probable increase in cost to take into account, and an expenditure can scarcely be justified in anything unless in connection therewith an advantage is afforded.

—From The Automobile.

NEW AUTOMOBILE INCORPORATIONS.

Royal Gray Motor Car Co., Asbury Park, N. J.; motor vehicles; capital, $50,000; by Louis R. Croce, M. F. Croce and others.

Bell Carbureter Company, Aurora, Ill.; manufacturing auto parts; capital, $12,000; by E. R. Conklin, C. B. Bell and others.

Standard Auto Company, Rockford, Ill.; capital, $10,000; manufacture and sell autos; by S. O. Widell, J. Wester, G. Laon.

International Engineering Co., Jersey City, N. J.; capital, $10,000; by L. B. Garretson, J. C. Connell and A. S. Campbell. The company is to manufacture motor vehicle engines, machinery, etc.

Morgan Motor Car Co., Wilmington, Del.; capital, $500,000; by E. L. Squire, K. M. Byrne, A. J. Byrne.

Sharp Arrow Automobile Co., Trenton, N. J.; manufacturing automobiles, vehicles, machines, etc.; capital, $125,000; by W. H. Sharp, J. R. Farlee, I. W. Bennett and others.

Skinner & Skinner Co., Chicago, Ill.; to manufacture automobiles; capital, $2,500; by S. G. Skinner, A. B. Skinner and others.

Brownsville Motor Car and Machinery Co., Brownsville, Tex.; capital, $5,000; by W. H. Mason, L. H. Hallam and C. Everson.

The Jewel Motor Car Co., Massillon, Ohio; capital, $250,000; by H. A. Croxton and others.

The Merchants Automobile Co., Cincinnati, Ohio; capital, $10,000; by Edward Stang and others.

Motor Appliance Co., Chicago, Ill.; capital, $2,500; manufacturing and dealing in automobiles; by J. W. Lindgren, E. H. Tillson, A. L. Rinzo.

Winchester Automobile Co., Winchester, Mass.; general automobile company; capital, $10,000; by George C. Tedford, 337 Talbot avenue, Boston, and others.

Model Automobile & Garage Co., Belleville, Ill.; to manufac-

Swingley Motor Car Co., St. Louis, Mo.; capital, $10,000; by C. W. Swingley, R. E. Swingley and others; to manufacture and deal in automobiles.

Hulburt Co., Portland, Me.; dealing in automobiles and carriages of all kinds; capital, $400,000; president, C. E. Eaton; treasurer, T. L. Croteau, Portland.

Kopmeier Motor Car Co., Milwaukee, Wis.; capital, $50,000; by W. S. Kopmeier, N. J. Kopmeier and others.

Club Automobile Company, New York; capital, $25,000; by T. Hopkins, M. L. Mooney, 236 West Fifty-second street; John J. Robinson, 233 East Nineteenth street.

Billard Deliver Co., Brooklyn, N. Y.; automobiles, carriages, etc.; capital, $2,000; by John A. Dilliard, Henry B. Lyons and others.

The Cincinnati Motor Car Co., Cincinnati, Ohio; capital, $10,000; by Jacob Haberer and others.

Maxwell-Briscoe Motor Vehicle Co., St. Louis, Mo.; capital, $15,000; by J. C. Handley, of Newcastle, Ind.; J. W. Wellington, of Tarrytown, N. Y., and others.

Randolph Motor Car Co., Chicago; to manufacture automobiles and accessories; capital, $300,000; by Edwin C. Gage and N. W. Burgstresser.

Joseph Strauss & Son, Buffalo, N. Y.; deal in automobiles, etc.; capital, $100,000; by J. Strauss, G. C. Strauss, T. Strauss and M. Strauss.

M. F. D. Motor Parts Co., Dover, Del.; capital, $25,000; by N. F. Minogue, J. De Angeli, A. Fetters, Philadelphia.

The F. S. Hoaglin Auto Company, Oshkosh, Wis.; capital, $10,000; by F. S. Hoaglin, A. E. Badger and L. O. Chase.

La Junta Automobile Co., La Junta, Col.; capital, $10,000; by R. S. Anderson and others.

The Western Reserve Motor Car Co. Cleveland, Ohio; capital, $50,000; by John H. Brice and others.

The Savoy Auto and Taximeter Cab Company, Far Rockaway, N. Y.; capital, $30,000; by Max Katz and others.

Wants

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, 5 cents a word. Initials and figures counts as words. Minimum price, 30 cents for each advertisement.

FOR SALE.

For Sale—A complete set of tools, machinery, benches, horses, etc. Enough to equip a first-class carriage factory. All in first-class condition. Address Waterloo Farm Fence Co., Waterloo, Iowa.

For Sale—Old established carriage and repair shops, located in center of eastern city, with population of 200,000. Doing high grade work on best carriages in town. Will sell cheap, as present owner is obliged to change climate. Full particulars by applying to "H. A. S.," care The Hub, 24 Murray street, New York, N. Y.

HELP WANTED.

Wanted—Reliable man as foreman in wood work machine room for carriage and automobile work; one who understands mechanical drawings. State experience and wages expected. Address S. H. R., care The Hub, 24 Murray street, New York.

For Sale—Carriage shop, tools and machinery. Fine location and trade also fine. New dwelling and two acres of land in college town. Address Oscar Purdy, Gambier, Ohio.

SITUATIONS WANTED.

Wanted—Position by all around carriage, wagon and automobile painter. First-class letterer, striper and finisher. Address "J. C. M.," care The Hub, 24-26 Murray street, New York City.

Wanted—Salesmen; all sections United States with established acquaintance among vehicle and blacksmith trade, to carry our solid rubber tire as side line. Small samples. Good commission. Address "J. J. G.," care The Hub, 24-26 Murray street, New York City.

Wanted—One of the large eastern carriage establishments wants a practical superintendent; a man familiar with the building of automobile bodies, fitting same to chassis and completing in perfect condition. A very liberal salary will be paid for the the right man. Address "B," care The Hub, 24 Murray street, New York City.

For Sale—To settle an estate, owned almost entirely by women, the carriage opportunity of a life time is presented. Going concern, established over half a century. Reputation on heavy and light carriages and automobile bodies. Unexcelled building 90 x 114, five stories and basement. In town of 50,000. Will sell or lease. Address "E. T. C.," care The Hub, 24-26 Murray street, New York City.

PATENTS.

Patents—H. W. T. Jenner, patent attorney and mechanical expert, 608 F street, Washington, D. C. Established 1883. I make an investigation and report if a patent can be secured and the exact cost. Send for full information. Trade-marks registered.

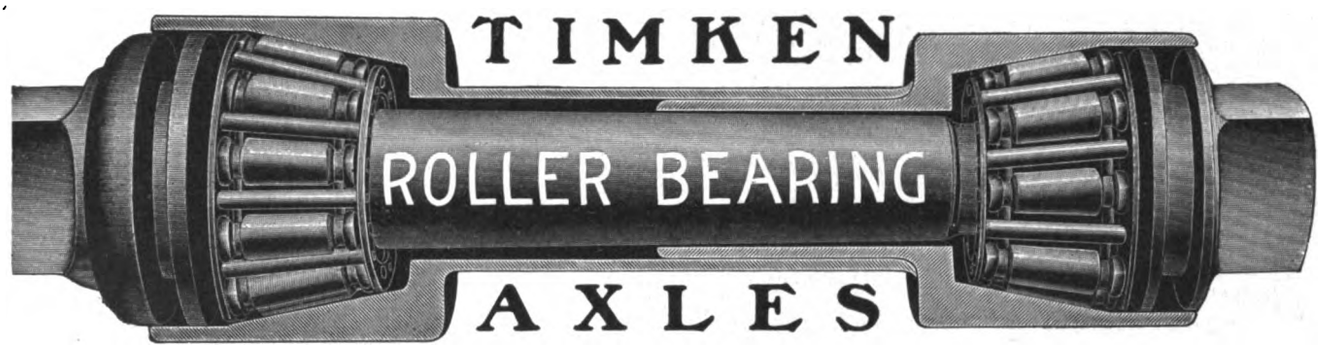
Digitized by Google

Timken Roller Bearing Axles

Are recognized as the most successful anti-friction axles for wagons and carriages throughout the entire world.

And There Is a Reason

due mainly to the correct principle employed; but the use of best materials obtainable and the thorough and exhaustive tests given each part, before the final test when the parts are assembled, means much.



Timken Roller Bearing Axles

are guaranteed for two years, but they last indefinitely with practically no signs of wear all the time, reducing the draft anywhere from 25 to 50 per cent.

Needing little attention—requiring oiling about once a month

Timken Roller Bearing Axles

have ceased to be an experiment. They are a proven success on all types and kinds of vehicle throughout the world.

Catalogs and Prices, with Facts, for the asking

The Timken Roller Bearing Axle Co.

Factory and Main Office, CANTON, OHIO

BRANCHES: 10 E. 31st STREET, NEW YORK
429 WABASH AVENUE, CHICAGO

Digitized by Google



A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

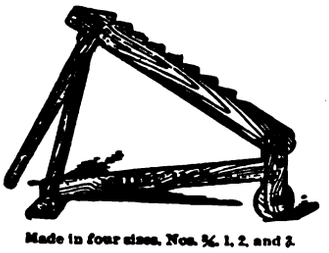
Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.



Made in four sizes, Nos. ½, 1, 2, and 3.

JACKS FOR BUGGIES AND WAGONS

Miller Patent Wagon Jack Made by

J. V. HANKINSON,

Successor to THOS. MILLER,

FRANKLIN, OHIO.

Write for particulars and prices.

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.

745 THIRD AVE., BROOKLYN, N. Y.

INDEX TO ADVERTISEMENTS.

American Roller Bearing Fifth Wheel Co..... 12
American Wood Block Co..... 22
Auxiliary Spring and Ventilating Button Co.....2d cover

Barnes & Co., W. F. & John..... 12
Bentel & Margedant Co..... 6
Bertram & Lamoreaux..... 20
Bradley & Son, C. C..... 21
Buggy Car Co..... 15

Central Bureau of Engraving..... 14
Cortland Forging Co..... 20
Columbus Bolt Works.....4th cover
Consolidated Rubber Tire Co..... 2
Crane & MacMahon.....2d cover

Dalzell Axle Co..... 22
Defiance Machine Works..... 15
Devoe, F. W., & Raynolds Co., C. T.....3d cover

Eccles Co., Richard..... 16
English & Mersick Co., The..... 5

Fitch Gear Co..... 21
Fairfield Rubber Co..... 15

Gerhab, Jacob 15
Gifford & Son, John A..... 13
G.-L. Economizer Co..... 4
Goodrich Co., B. F., The..... 17
Goodyear Tire and Rubber Co..... 3

Halsey & Smith.....—
Hankinson, J. V..... 12
Harland & Son, Wm..... 1
Hoopes Bro. & Darlington, Inc.....2d cover
Howell & Co., T. P..... 19

Indianapolis Bolster Spring Co..... 20

Jones & Co., Phineas..... 13

Keystone Forging Co.....13
Kokomo Rubber Co.....4th cover
Koller & Co., J. B.....16

Landsman Motor Co..... 14

Masury & Son, John W..... 2
McKinnon Dash Co..... 4th cover
Miller Bros. 16

National Spring and Wire Co..... 20
Nobles & Hoare.....3d cover

Pomeroy & Fischer.....3d cover
Porter, H. K..... 20

Rand, McNally & Co..... 5
Russell, Burdsall & Ward Bolt and Nut Co..... 22

Schubert Bros. Gear Co..... 20
Schubert Gear Co., August..... 16
Sheldon Axle Co..... 21
Shortsville Wheel Co..... 18
Smith & Co., Edw..... 5
Spring Perch Co..... 13
Standard Oil Cloth Co..... 4
Standard Varnish Works..... 3
Stein Double Cushion Tire Co..... 5
Studebaker Bros. Mfg. Co..... 14

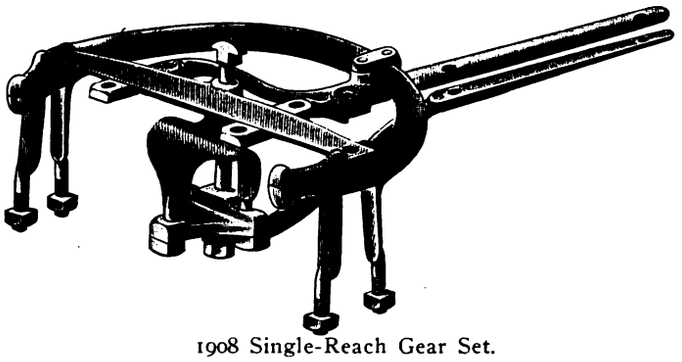
Timken Roller Bearing Axle Co..... 11
Tucker Wood Work Co..... 18

Valentine & Company..... 4

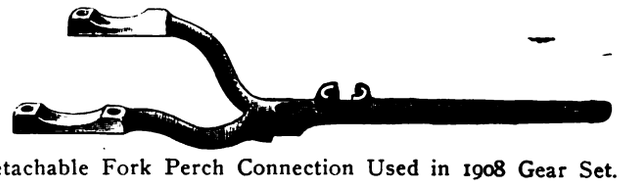
West Tire Setter Co.....3d cover
White, H. F..... 20
Wiesse & Co., Wm..... —
Wilcox Mfg. Co., D..... 13
Willey Co., C. A..... 6
Woodman, Joel H..... 21

Digitized by Google

FIFTH WHEELS—FORGINGS



1908 Single-Reach Gear Set.



Detachable Fork Perch Connection Used in 1908 Gear Set.

Greatest Line on Earth

WHEN ORDERING GEAR SETS BE SURE TO GET THE GENUINE

Wilcox Rear King-Bolt Gear Sets

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MANUFACTURING CO.

MECHANICSBURG, PENNSYLVANIA

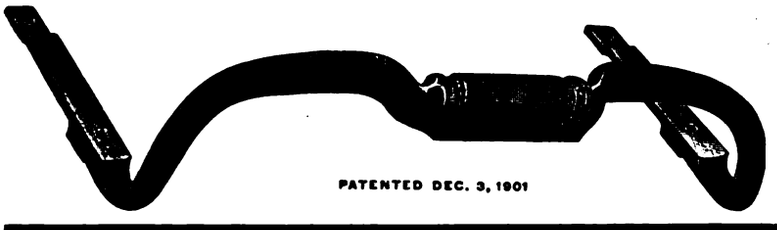
JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

Jones Wheels

BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.



PATENTED DEC. 3, 1901

THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland Pa.

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

Please mention "The Hub" when you write.

Digitized by Google



The best buggies for the money on the market

The "World" Line

THIS splendid line of medium grade work grows in favor with the trade every year. This year it is just a little better than ever before. The cut shown above of our new twin auto-seat buggy with quick shifting device for removing top is a great seller

SEND FOR CATALOG

Studebaker

Brothers Manufacturing Co.
South Bend, Indiana, U. S. A.

Build Your Own Auto

A GASOLINE ENGINE TO FIT ANY BUGGY or WAGON

LANDSMAN MOTOR CO.
908 Hickory St. ST. LOUIS, MO.
Write for Catalogue.

MANUFACTURERS

DESIRING FIRST-CLASS ILLUSTRATIONS OF THEIR PRODUCT, AT REASONABLE PRICES, SHOULD PERMIT US TO SUBMIT AN ESTIMATE.

Central Bureau of Engraving
COMMERCIAL ENGRAVERS
157-159 WILLIAM STREET, NEW YORK

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

Axles, Etc.
Dalzell Axle Co., South Egremont, Mass.
Sheldon Axle Co., Wilkes-Barre, Pa.
Sparks-Withington Co., The, Jackson, Mich.
Standard Ball Bearing Axle Co., Lancaster, Pa.
Timken Roller Bearing Axle Co., Canton, Ohio.

Bodies, Seats, Etc.
Frans Body Mfg. Co., Akron, O.
Woodman, Joel H., Hoboken, New Jersy.

Bodies in the White.
Miller Bros., Amesbury, Mass.
Schubert Bros. Gear Co., Oneida, N. Y.

Bolts and Nuts.
Columbus Bolt Works, Columbus, Ohio.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

Carriage Cloths.
Wiese & Co., Wm., New York City.

Carriage Forgings.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

Carriage Hardware.
Gifford & Son, John A., New York.

Carriage Goods.
Cortland Carriage Goods Co., Cortland, N. Y.
English & Mersick Co., New Haven, Conn.
Fairfield Rubber Co., Fairfield, Conn.
Gifford & Son, John A., New York.

Dashes, Fenders, Rails, Etc.
McKinnon Dash Co., Buffalo, N. Y.

Engraving.
Central Bureau of Engraving, New York City.

Fifth Wheels.
American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

Finished Vehicles.
Studebaker Bros. Mfg. Co., South Bend, Ind.

Hubs.
American Wood Block Co., The, Delphos, Ohio.
Koller & Co., J. B., Mechanicsburg, Pa.

Jacks.
Hankinson, J. V., Franklin, O.

Lamps.
Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

Leather.
Howell & Co., T. P., Newark, N. J.

Machinery and Tools.
Barnes Co., W. F. & John, Rockford, Ill.
Bentel & Margedant Co., Hamilton, Ohio.
Defiance Machine Works, Defiance, Ohio.
G.-L. Economizer Co., The, New York.
Maxwell & Fitch Co., The, Rome, N. Y.
Porter, H. K., Everett, Mass.
West Tire Setter Co., Rochester, N. Y.

Miscellaneous.
Bertram & Lamoreoux, Detroit, Mich.
Jewel Mfg. Co., Chicago, Ill.
Standard Oil Cloth Co., New York.

Rubber Tires.
Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, O.
Goodyear Tire and Rubber Co., Akron, O.
Kokomo Rubber Co., Kokomo, Ind.
Stein Double Cushion Tire Co., Akron, O.

Shaft Couplings and Anti-Rattlers.
Bradley & Son, C. C., Syracuse, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Metal Stamping Co., New York City.
Speedy Shaft Coupler Co., Langworthy, Iowa.

Springs and Gears.
Auxiliary Spring and Ventilating Button Co., Detroit, Mich.
Cooper, J. A. & D. P., Struthers, O.
Fitch Gear Co., Rome, N. Y.
Indianapolis Bolster Spring Co., Indianapolis, Ind.
National Spring and Wire Co., Albion, Mich.
Schubert Bros. Gear Co., Oneida, N. Y.
Spring Perch Co., Bridgeport, Conn.

Spokes.
Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.
Koller & Co., J. B., Mechanicsburg, Pa.

Trimming Materials.
Stevens & Sackett Co., New Haven, Conn.

Varnishes, Paints and Japans.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Harland & Son, Wm., London and New York.
Johnston Paint Co., R. F., Cincinnati, O.
Masury & Son, John W., New York and Chicago.
Nobles & Hoare, London, Eng.
Pierce Co., F. O., N. Y. City.
Pomeroy & Fischer, N. Y. City.
Smith & Co., Edw., N. Y. City.
Standard Varnish Works, New York City.
Valentine & Co., New York, Chicago, Boston, Paris.
Willey Co., C. A., Hunter's Point, New York City.

White Lead.
Eagle White Lead Co., Cincinnati, Ohio.

Wheels.
Crane & MacMahon, New York.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.
Shortsville Wheel Co., Shortsville, N. Y.
Wapakoneta Wheel Co., The, Wapakoneta, Ohio.

Wheel Stock, Bent Wood, Etc.
Crane & MacMahon, New York.
Koller & Co., J. B., Mechanicsburg, Pa.
Tucker Wood Work Co., Sidney, Ohio.

Digitized by Google

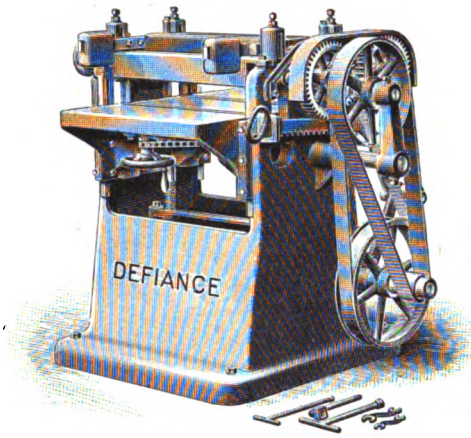
"DEFIANCE" WOOD-WORKING MACHINERY

Invented and Built by

The Defiance Machine Works Defiance, Ohio



12-in. Hand Planer with Boring Attachment

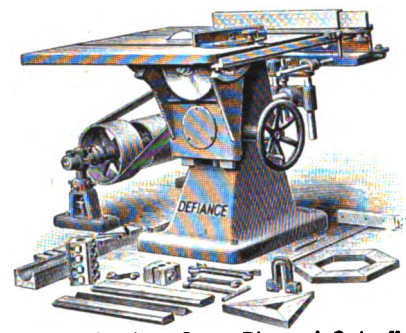


24-in. Single Surface Planer.

These Machines are made in large numbers. They are of a Strictly High Quality and are Sold at Moderate Prices.

For Making

Hubs, Spokes, Wheels, Wagons, Carriages, Rims, Shafts, Poles, Neckyokes, Singletrees, Hoops, Handles of all Kinds, Insulator Pins, Bobbins, Spools, Table Legs, Oval Wood Dishes and for General Wood Work.



No. 8 Variety Saw—Rip and Cut-off

The Fairfield Rubber Co.

Manufacturers of Carriage Cloth, Imitation Leather, etc. For Automobiles and Carriages

Fairfield - - - Connecticut

Headquarters for "The H. D. Smith & Co.'s" Carriage and Wagon Forgings

JACOB GERHAB

DEALER IN

Carriage Cloths, Leathers and Trimmings, Wagon and Cart Material

Salable prices and all information cheerfully furnished

158, 160, 162 and 164 North Third Street PHILADELPHIA, PA.

The most power to the weight car of any of this type now on the market.

SIMPLE, DURABLE AND RELIABLE

Four years of success. Write for catalog and prices



THE BUGGYCAR CO.

ARMORY AND JOHN STREETS

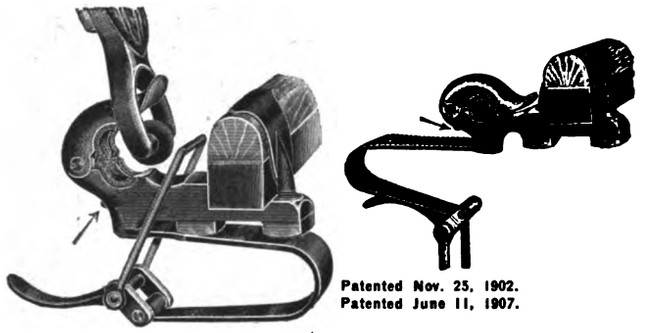
CINCINNATI :: :: :: :: OHIO

Digitized by Google

Eccles Ball Bearing Couplings

ALL OUR COUPLINGS ARE SHIPPED OUT WITH TWO PIECE BUSHINGS, FASTENED IN THE COUPLINGS

WHEN BUSHINGS ARE WORN OUT BY LONG USE, THEY CAN BE INSTANTLY REPLACED AND FASTENED INTO THE SOCKET BY OUR SPECIAL PROCESS



Patented Nov. 25, 1902.
Patented June 11, 1907.

THE SPRING IS PIVOTED AT THE FRONT SO THAT IT CAN BE TURNED OUT OF THE WAY OF THE WRENCH WHILE CLIPPING COUPLING TO THE AXLE.

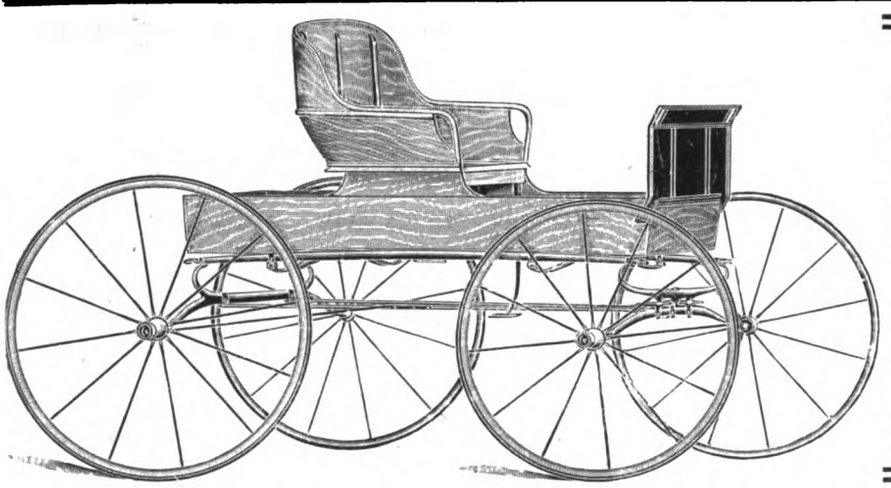
No Lost Bushings when you Use Our Couplings

We Make a Full Line of Carriage and Wagon Forgings

RICHARD ECCLES COMPANY

Catalogue No. 15 is our latest

AUBURN, NEW YORK



No. 215

SIDE BAR ROAD WAGON

ATTRACTIVE, ROOMY and POPULAR

One of our thirty styles that enjoy the call of live builders. Have you seen the latest in cutunders? If interested, see us.

We also build forty different types of gears and make a specialty of tops and trimmings.

WORK-IN-THE-WHITE

Would you like our catalogue?

AUGUST SCHUBERT GEAR CO.

ONEIDA, N. Y.

J. B. Koller & Company

Manufacturers of all kinds and sizes of

Finished Spokes and Bent Rims

Also all kinds of

SLEIGH, SLED AND BOB SLED RUNNERS

MECHANICSBURG, PA.

MILLER BROTHERS

Builders of

CARRIAGES

IN THE WHITE

AND

Automobile Bodies

AMESBURY, MASS.

Digitized by Google

TRADE MARK

GOODRICH TIRES



FIFTEEN YEARS good is an inviting sort of reputation, but present worth is our immediate argument. We ask you to buy GOODRICH SOLID RUBBER TIRES for the service that you or your customer can get out of them **to-day.**

A service that has been successful for a long term of years—a service that is based upon a manufacturing policy which insists on **holding up the grade.** Always the same—always the best.

Chicago: 24 E. Lake St. Philadelphia: 1332 Arch St. Boston: 161 Columbus Av.
Detroit: 266 Jefferson Av. Cleveland: 2188 9th St. S. E. St. Louis: 3926-28 Olive St.
Denver: 1422-24 Court Pl. Kansas City: 1728 Grand Av. London: 7 Snow Hill, E. C.
Paris, 2 Rue Brunel, Avenue de la Grande Armee.
Our products are also handled in
New York: 66-68 Reade St. Buffalo: 731 Main St.
By The B. F. GOODRICH COMPANY, of New York.
and in
San Francisco: 50-56 Fremont St. Los Angeles: 818 S. Broadway Seattle: 310 First Av. S.

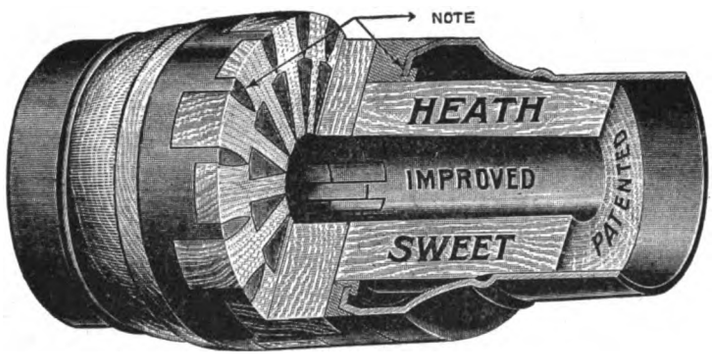
FRANK W. TUCKER
29-33 Haverhill St. Boston, Mass.
New England Agent

THE
B·F·GOODRICH CO.
AKRON, OHIO.

The Hub CURLEY.

Digitized by Google

SOMETHING NEW



NOTE POSITIVE POINTS.

1—Same Spoke Lock as Original Sweet.
2—No Wooden Cap on either end to Split or become Loose in any way.
3—Solid Wood from Back to Front.
4—Center and Front Bands joined with a Perfect Internal Lock, making a Solid Band from Rear of Spoke to Out End of Point.
5—Is as Light as the Sweet or Wood Hub with Bands of the Same Size.
6—The Style which the Best Carriage Builders in the Country are Using.

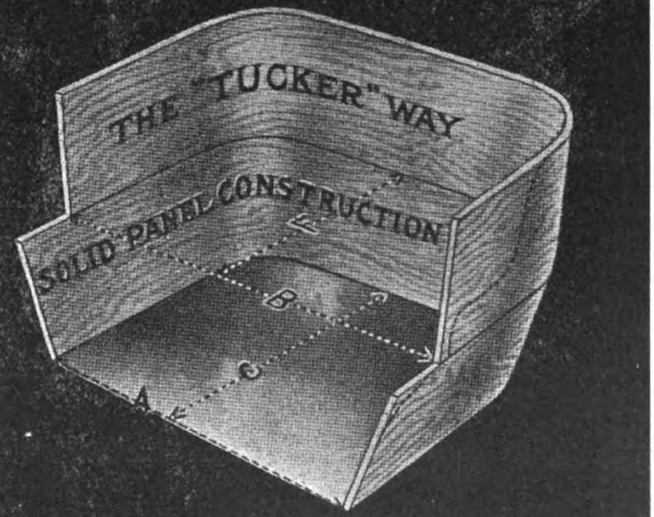
In Ordering Specify **HEATH HUB**

MANUFACTURED BY THE

Shortsville Wheel Company

Shortsville, N. Y.

SOLID BENDINGS



MAKE FAULTLESS SEATS

CATALOG "H" SHOWS SIZES
WRITE FOR IT
THE TUCKER WOODWORK CO. SIDNEY, OHIO.

HOTEL CUMBERLAND

NEW YORK

Southwest Cor. Broadway at Fifty-fourth St.

Near 50th St. Subway and 53d St. Elevated Stations and accessible to all surface lines.



Headquarters for Carriage and Automobile Trade

Ideal Location, Near Theatres, Shops and Central Park.

NEW AND FIREPROOF

STRICTLY FIRST-CLASS

All Outside Rooms. No Carpets. All Hardwood Floors and Oriental Rugs.

Ten Minutes Walk to Twenty Theatres.

Transient Rates, **$2.50** with Bath, and up.

Restaurant Unexcelled. Prices Reasonable.

SEND FOR BOOKLET.

HARRY P. STIMSON, *Formerly with Hotel Imperial.*

R. J. BINGHAM, *Formerly with Hotel Woodward.*

Digitized by Google

LION BRAND

T. P. HOWELL & CO. LEATHER ESTABLISHED 1840 NEWARK, N.J.

CARRIAGE AUTOMOBILE AND LEATHER

FOR CUSTOM AND WHOLESALE TRADE



"The King of Leather"



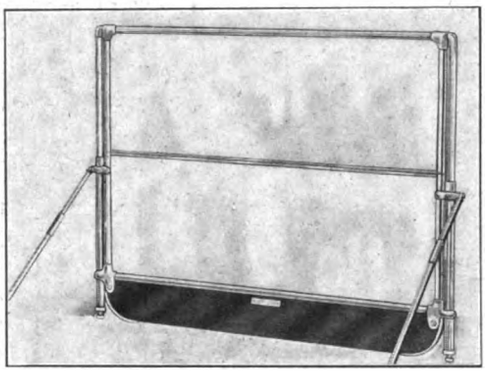
T. P. HOWELL & CO

NEWARK, N. J., U. S. A.

THE HUB. CURLEY

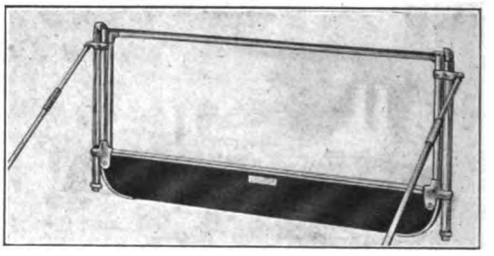
Digitized by Google

WILL NOT RATTLE—TELESCOPE WIND SHIELD





Try one and be convinced. Get a Wind Shield that is all we claim for it—absolutely the best on the market; one for which you need never make an apology; one that is not only a Wind Shield but an improvement to any car.





BURTRAM & LAMOREAUX,
72 Fort Street East, Detroit, Mich.

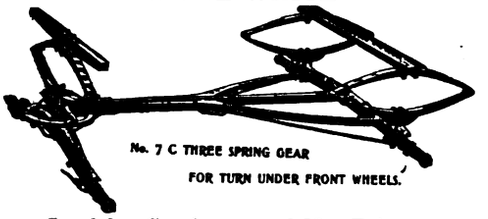
Our Carriage or Spring Edge Cushion Frame



Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.
NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

Tops and Trimmings, Complete Vehicles, Gears and Seats

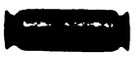
IN THE WHITE



Send for Catalogue and Net Prices.
SCHUBERT BROTHERS GEAR CO.
ONEIDA, NEW YORK

PROTECTOR BOLT CLIPPERS
EVERETT, MASS., U.S.A.

BRAZING SLEEVES



For Putting on Rubber Tires.
No Filing or Scarfing.



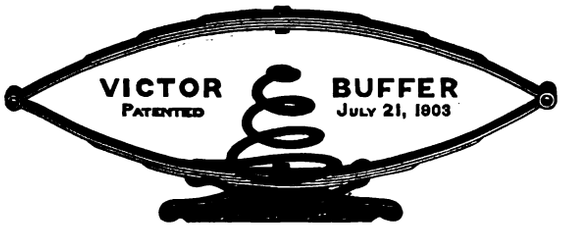
LINED UNLINED

H. F. WHITE, 111 E. Pearl St., Cincinnati, O.

For Weak or Overloaded Springs.

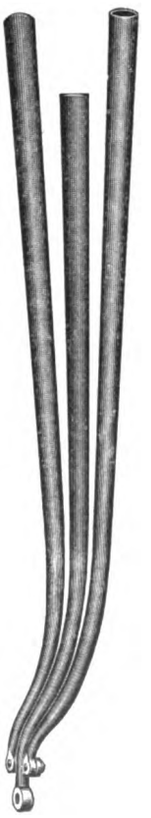
VICTOR STEEL SPRING BUFFERS

Save wagon, prevent breakdowns, and add materially to the carrying capacity. If your dealer does not have them write to us direct.



Made in Four Sizes: 0, 1 1-4 in. spring & under; 1, 1-4 in. to 1 1-2 in. spring; 2, 1 1-2 in. to 2 in. spring; 3, 2 in. to 2 in. spring.
Carrying capacity of each spring: No. 0, 400 lbs.; 1, 750 lbs.; 2, 1000 lbs.; 3, 1250 lbs.

Manuf'd by INDIANAPOLIS BOLSTER SPRING CO.
INDIANAPOLIS, INDIANA.



Offset Buggy Bow Sockets

and

Auto Style Shifting Rails

for

Auto Buggy Seats

Get our Catalogue D, now ready.

Top and Bottom Forgings for
BUGGIES
AUTO-BUGGIES
AUTOMOBILES

Emergency Stocks at
1222 Third Ave., Moline, Ill., and with
Carriage Specialty Co.,
Cincinnati, O.

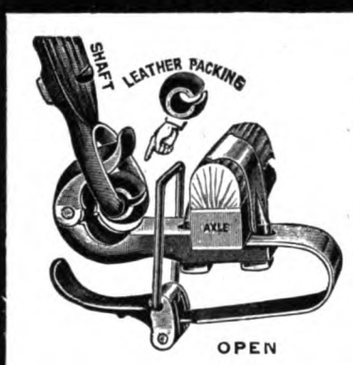
Cortland Forging Co.

CORTLAND, N. Y.

Home of the AJAX Family

Digitized by Google

THE BRADLEY SHAFT COUPLING



OPEN

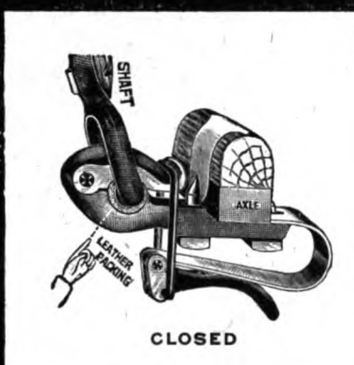
Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME !

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1½ in. in section.

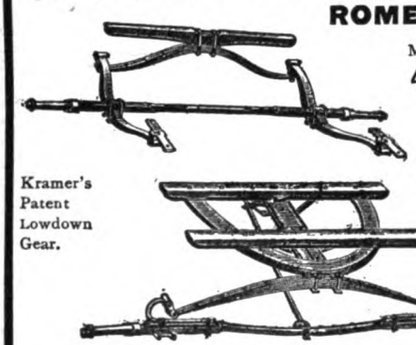
C. C. BRADLEY & SON, Syracuse, N. Y.



CLOSED

FITCH GEAR CO.

ROME, N. Y., U. S. A.


Kramer's Patent Lowdown Gear.

Manufacturers of over

40 STYLES of GEARS

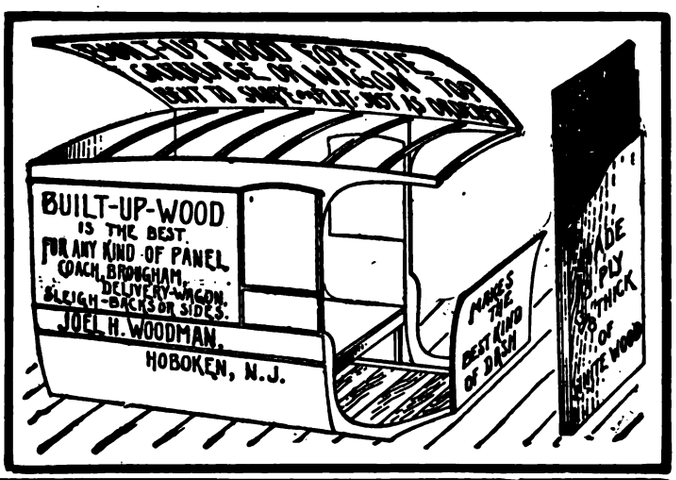
From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.

Sole Manufacturers of the celebrated

Kramer Lowdown Short Turn Gear

It is the Finest Gear for Drop Centre-Body for Milk, Bakers' or Butchers' Wagons on the market.

Send for our No. 22 Catalogue, just out.



Axles

A complete line of Wagon and Carriage Axles—Common, Concord, Farm Wagon, Half Patent, Long Distance, Collinge and Mail Patent. Empire Ball Bearing Axles. Made only by

SHELDON AXLE COMPANY, Wilkes-Barre, Pa.

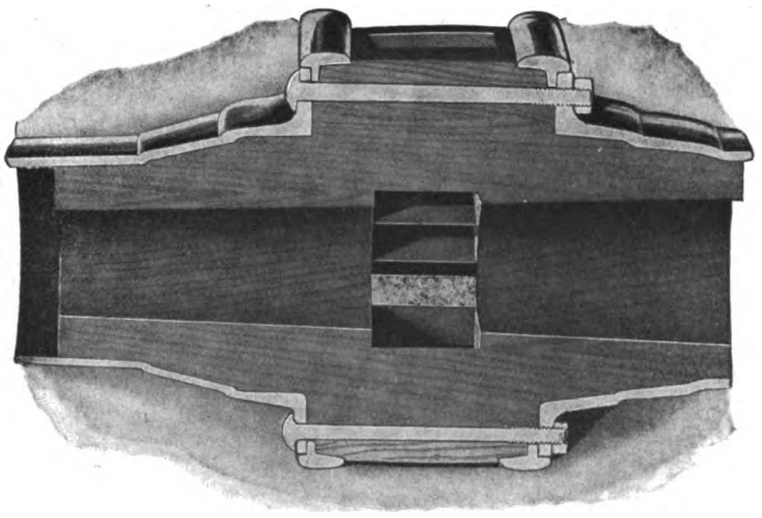
The Best and Easiest Riding Springs, for both Light and Heavy Vehicles. We have had very great success with our Automobile Springs : : : : : :

Sprnigs

Please mention "The Hub" when you write.

Digitized by Google

The American Wood Block Co., Delphos, O.



SECTIONAL VIEW.

Hub Blocks

Green—Air and Kiln Dried. Sold by grade or timber run. Compressed blocks or otherwise. 3 in. to 12 in. diameter. Stock kept up to standard quality and ready for shipment at all times.

GILLETTE'S

"IDEAL"

HUB

It stands the Racket

The **IDEAL** hub makes the strongest wheel. Repairs are less than on any other style; actual use has proven these facts.

IDEAL is metal protected, wood to wood center, means elasticity; simplicity of construction, easily and quickly repaired, driven spokes best of all, no metal to corrode.

IDEAL has the patented inverted flange that prevents lateral strain.

IDEAL means less tire resetting.

Try it—it is guaranteed.

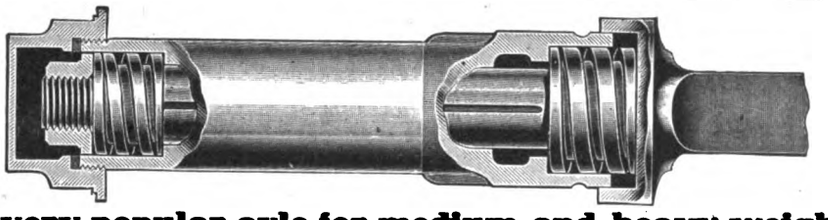
We want the wheel makers to use the **IDEAL** in their wheels.

The American Wood Block Co

DELPHOS, OHIO

HUB BLOCKS HUBS DIMENSION STOC

PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

DALZELL AXLE CO., South Egremont, Mass.



BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES } **C. T. RAYNOLDS & CO'S** { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES }

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

HIGH CLASS ENGLISH VARNISHES

Nobles & Hoare

Cornwall Road, Stamford Street

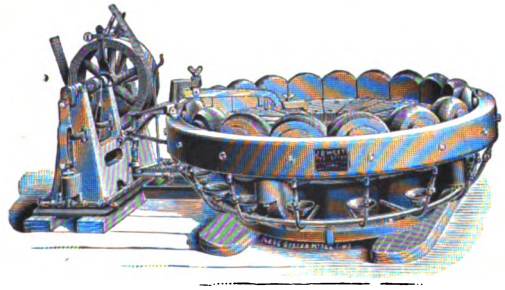
LONDON

TRADE NOBLES & HOARE NH LONDON MARK

Sole Agents in United States **POMEROY & FISCHER** New York

28 and 30 Frankfort St. (P. O. ox 1224)

THE FIRST TIRE SETTER

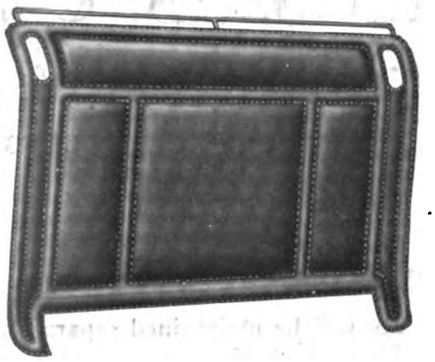


you ever heard of was a **"WEST"**—probably, for they were on the market several years before any other and you are hearing more about them every year. Many of the older users are loudest in their praise. That's because they stand the test of time—they're made that way. Some of our Hydraulic machines have been **in use fourteen years** and are doing as good work now as when first installed. **Now**, we don't claim our machines are best simply because they have been longest on the market, **but because** we have been making a study of cold tire setting all these years and improving our machines as experience and observation taught us, and when you buy a **"West Hydraulic"** you get the benefit of this experience. Some people knowing **our** machines would set tires cold satisfactorily, thought some other would do as well—and the price was cheap—also machine. Now they wish they had bought a **"West Hydraulic."** **If you make a similar mistake it's your own fault.**

Buy a **"West Hydraulic"** and be happy. Hand or Power machines.

THE WEST TIRE SETTER COMPANY, Rochester, N. Y.

Digitized by Google



No. 326. With Raised Rail.

A Wing Dash with a Rail Welded Solid

NICKEL PLATED OR JAPANNED

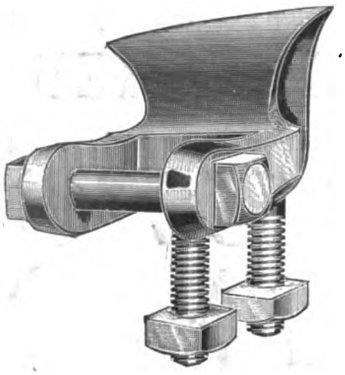
Makes the Best Selling Job

McKinnon Dash Company

Cincinnati, O.
Troy, O.

Buffalo, N. Y.

St. Catharines
Ontario



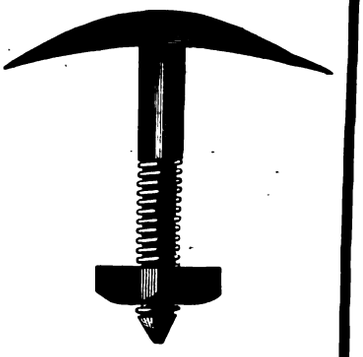
Skewed Shaft Couplings

Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips 5/8 or 3/4 width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

1908 Catalog "H" on application.

COLUMBUS BOLT WORKS, Columbus, O.



Kokomo Solid Rubber Tires

¶ In rubber substance the Kokomo Solid Rubber Vehicle Tire is truly **SOLID.**

¶ Solid with the pure stock that has made them an exception to the ordinary tires of commerce.

¶ In Kokomo quality there is an established standard that is recognized as the highest ideal of tire construction. The Kokomo is a standard tire in every respect.

¶ Kokomo Tires always score in the running, and the longer the test the more convincing the results.

Kokomo Rubber Company

Kokomo, Indiana, U. S. A.

Digitized by Google

The Hub



Business conditions continue to improve all along the line, and this upward trend is especially noticeable in the carriage trade. Full time and full force is now the rule, not the exception, and the orders for the month are largely in excess of those for the corresponding month of last year.

A feeling of optimism pervades the country. The grumbler has been relegated to the rear.

Oldest Carriage Journal in the World

1858 1909

Vol. L. No. 11 FEBRUARY, 1909

Digitized by Google

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

"GOOD-AD" WINDOW SIGNS PALM, FECHTELER & CO. BOSTON 57 FIFTH AVE NEW YORK MONTREAL CHICAGO

DECALCOMANIE

"GOOD-AD" WINDOW SIGNS PALM, FECHTELER & CO. BOSTON 57 FIFTH AVE NEW YORK MONTREAL CHICAGO

TRANSFERS FOR ALL PURPOSES

Scrolls, Figures, Flowers, Letters, Animals, Stripings, Numerals, Corners, etc. ¶ Special Name Plates of all descriptions. Buggy Ornaments in sets. ¶ Beautiful Scroll Effects for ceiling work in Limousine bodies; also a large and attractive line of Plaid Designs for panels in automobiles. Every live maufacturer should look up this proposition. Nothing is more effective in body embellishment. Cane Work Transfers are also a big specialty with us. Name your wants and let us talk with you. ¶ New catalogue will soon be ready and will be sent with cash orders of $1.00 or more. No paint shop is complete without our catalogue. -:- -:- -:- -:- -:- -:- -:-

Palm, Fechteler & Company

67 Fifth Avenue, New York

Chicago **St. Louis** **Montreal** **Toronto**



CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

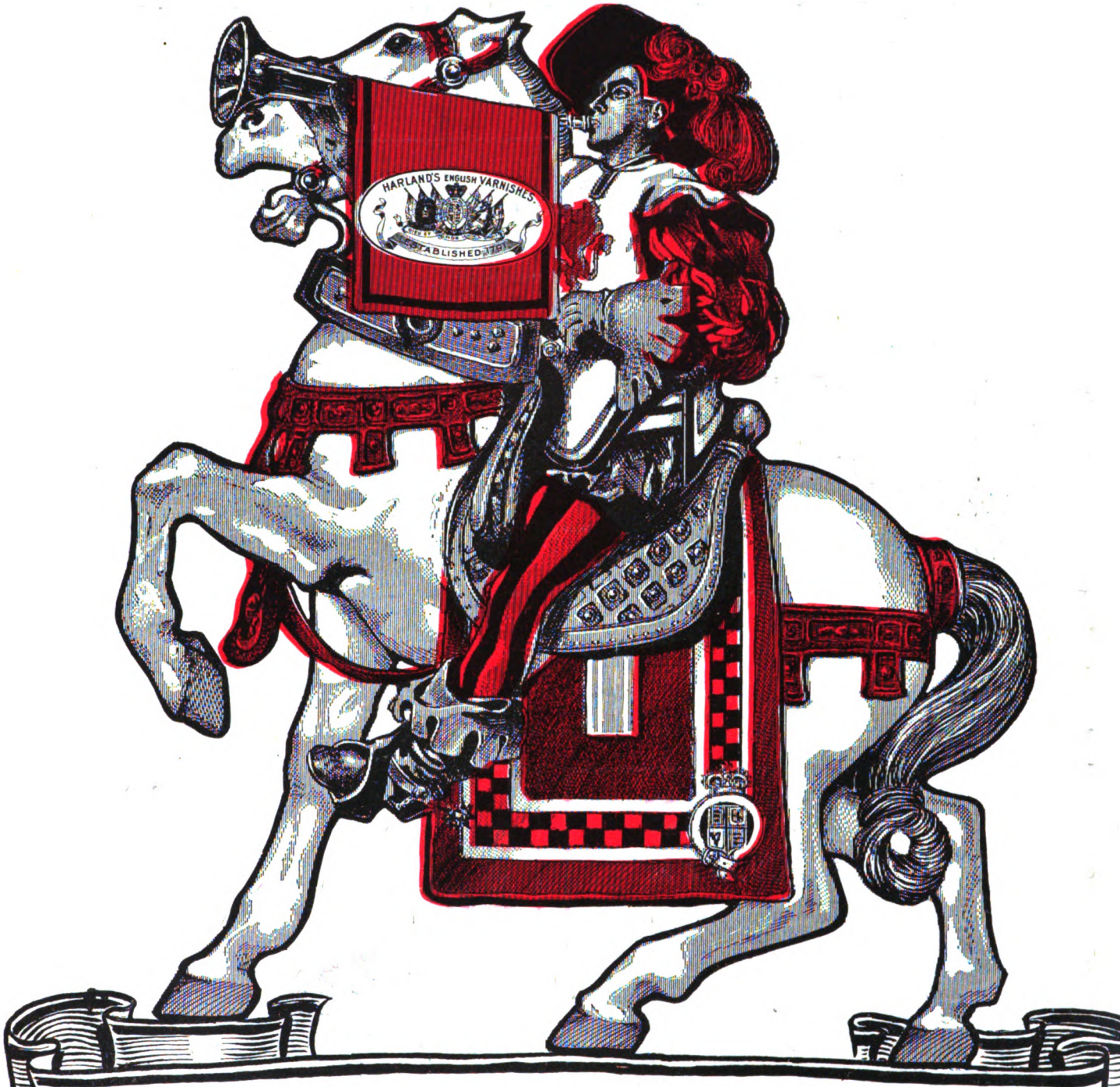
Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google



The renown of Harland's English Varnish has been heralded to every part of the world, and its sterling merit recognized by all vehicle builders who desire strictly high-grade varnish. Quality is our slogan, and it is our unsurpassed quality which has given our varnishes a universally pre-eminent position and made them the standard with which all others are compared.

For the Best Wearing, Lasting and Most Beautiful Finish, Use

HARLAND'S ENGLISH VARNISH

It's the cheapest in the end.

WM. HARLAND & SON

FACTORIES:
Merton, London S. W., England

AMERICAN HEADQUARTERS:
168 Center St., New York

WESTERN MANAGER: C. W. SCHOOLEY
40 Dearborn St., Chicago

General Manager for United States and Canada, H. HAGGER

Digitized by Google

JOHN W. MASURY & SON

MANUFACTURERS OF

Superfine Coach Colors and Varnishes

NEW YORK——AND——CHICAGO

MERITAS

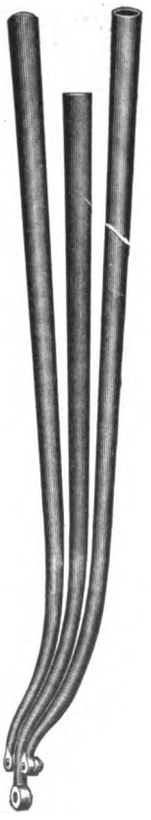
CARRIAGE ENAMELED **OIL CLOTH**



Insist on being "shown" before you spend good money on oil cloth. Look up past performances of all brands, then see your jobber for MERITAS---GUARANTEED wear and weather proof.

Standard Oil Cloth Co.

320 Broadway, NEW YORK.



Offset Buggy Bow Sockets

and

Auto Style Shifting Rails

for

Auto Buggy Seats

Get our Catalogue D, now ready.

Top and Body Forgings for

BUGGIES
AUTO-BUGGIES
AUTOMOBILES

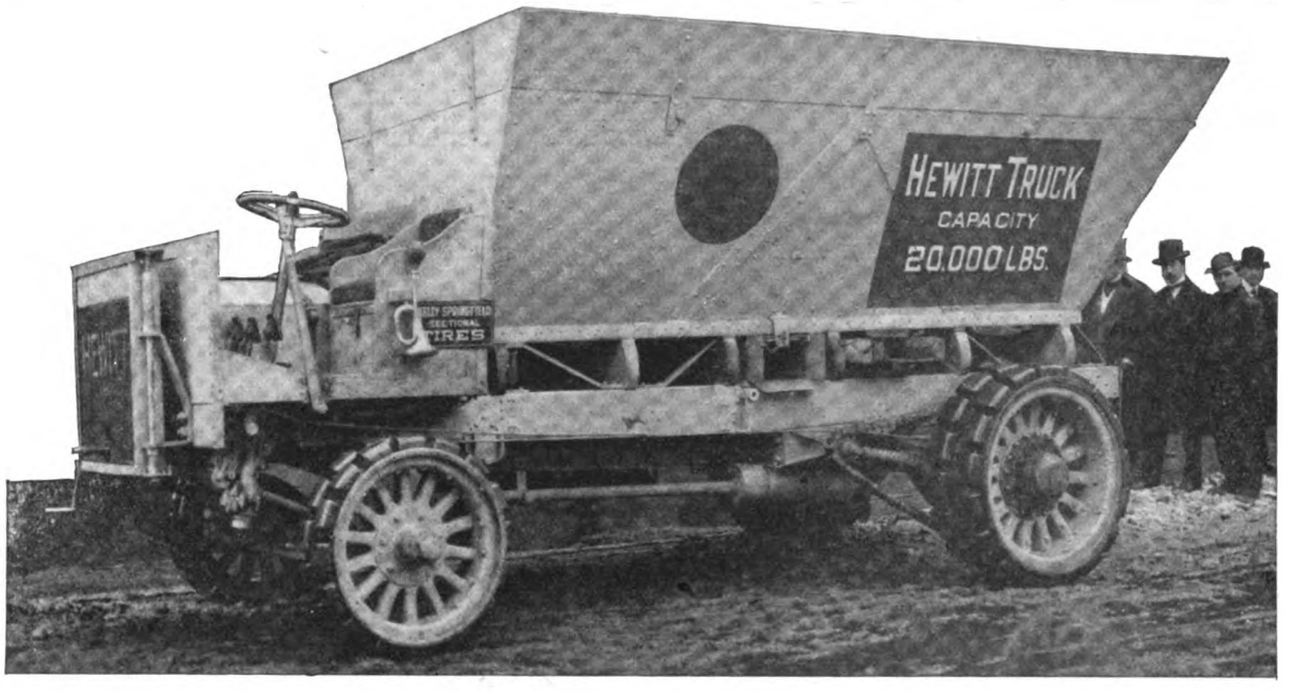
Emergency Stocks at
1222 Third Ave., Moline, Ill., and with Carriage Specialty Co., Cincinnati, O.

Cortland Forging Co.

CORTLAND, N. Y.

Home of the AJAX Family

Digitized by Google

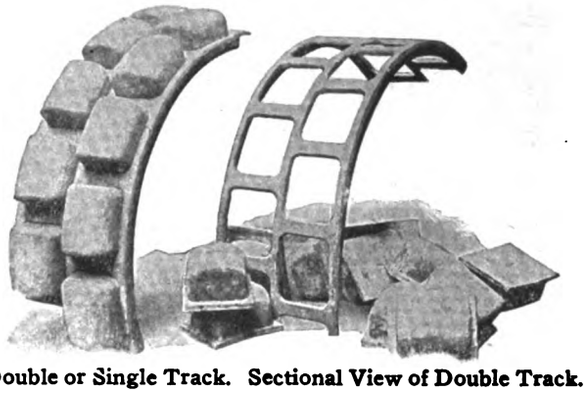


Hewitt Truck Equipped with Kelly-Springfield Sectional Tires.

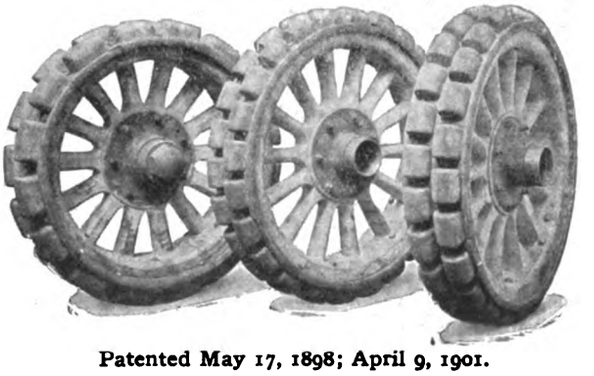
SOLVED!

Is the way the motor car experts express themselves on the subject of tires for commercial motor vehicles after seeing and using the :: :: :: :: :: ::

KELLY-SPRINGFIELD SECTIONAL TIRE



Double or Single Track. Sectional View of Double Track.



Patented May 17, 1898; April 9, 1901.

With a grip on the road that means progress and security from the fault of solid tires—that of crowding the rubber ahead under load, which means disintegration—the motor wagon and truck owner will find in the Kelly-Springfield Sectional Tires the best tire for all heavy cars. Each section is dependent upon itself. If interested, write :: :: :: ::

Consolidated Rubber Tire Company

NEW YORK, N. Y.—and—AKRON, OHIO

Branches:

BOSTON CHICAGO PHILADELPHIA ST. LOUIS DETROIT CINCINNATI SAN FRANCISCO

Digitized by Google

QUALITY— That which is an element of anything or aids in making it DISTINCT from other things. — Dictionary definition. **—VARNISH**

TRY VALENTINES VARNISH USE

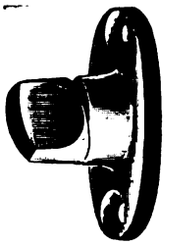
And become convinced about the matter of

QUALITY

VALENTINE & COMPANY

New York Chicago Boston Toronto Paris Amsterdam

Rex Curtain Fasteners



have made good. Our business and our satisfaction in these goods increases daily. They are made on the same sound principles as the old standard Brewster Fasteners (made by us), but without the fine fitting and finish. The strongest and neatest low priced fasteuers on the market to-day. Sample sent on request. Prices are way down.

The English & Mersick Co.

New Haven, Conn.

82 Years' Experience in Every Can

E.S. 1827 & CO. **Edward Smith & Co.**

CARRIAGE VARNISHES

Everything from the
Bare Wood to the Finishing Coat.

CHICAGO NEW YORK

HOTEL EARLINGTON

55 WEST 27TH STREET
Near Broadway, NEW YORK

This well known, absolutely fireproof hotel, after being entirely renovated, redecorated and fitted up complete with new plumbing has now reopened.

Rates from $1.00 and Up
With Bath, $5.00 and Up

Special rates by the season or year for permanent guests. A special feature will be the cuisine, both in the dining room and in the new cafe for ladies and gentlemen. A la Carte and Table d'Hote.

Hotel under the management of

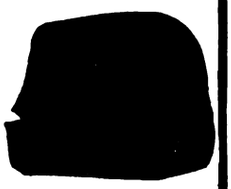
GUERNSEY E. WEBB
Formerly of the Ansonia.

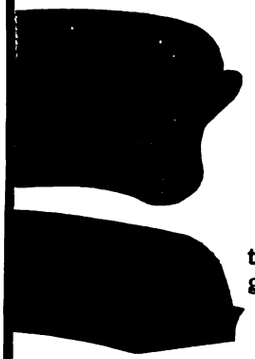
Digitized by Google

These Tires Last Longer

Each Goodyear Solid Tire has a special improvement to lengthen its life and give more satisfactory service than ordinary tires.

The Goodyear Sidewire Tire for instance. This is the only solid tire specially adapted to auto buggies. The spring steel plates between the canvas and rubber at the base, positively prevent the side wires from ever getting between the tire and the channel. In addition, an internal retaining wire holds the tire even in case some unusual side strain should break the outside wires. We offer this tire in standard conical or corrugated broad-tread type.





The Goodyear Eccentric Cavity Cushion has almost double the wearing depth, owing to the hole below center. The pressure does not crack the rubber around the wire. This is the Eccentric Cavity Cushion Tire with canvas guides. You can't put them on wrong.

The Goodyear Wing Tire (see the wings) keeps out all dust, grit, mud and water which get under the ordinary tire and "sandpaper" or rot them out.

GOODYEAR

Solid Rubber Tires

also last longer because they are made of new rubber, fresh from the trees. The new rubber used in Goodyear Tires is now quoted at $1.20 per pound.

We could make tires of "reclaimed" rubber—rubber resurrected from the junk pile—that costs 10c a pound, or "Lapori," or "Guayule," costing 35c a pound.

It is the "reclaimed," "Lapori" or "Guayule" tire that begins to wear out and tear out before any actual hard service.

All the life is burnt out of reclaimed rubber by heat and acid in the reclaiming process. A tremendous heat is necessary to devulcanize it. Just contrast such rubber with the pure, lively and durable gum which enters each and every Goodyear Tire. No wonder they are so famous for outwearing the other kind.

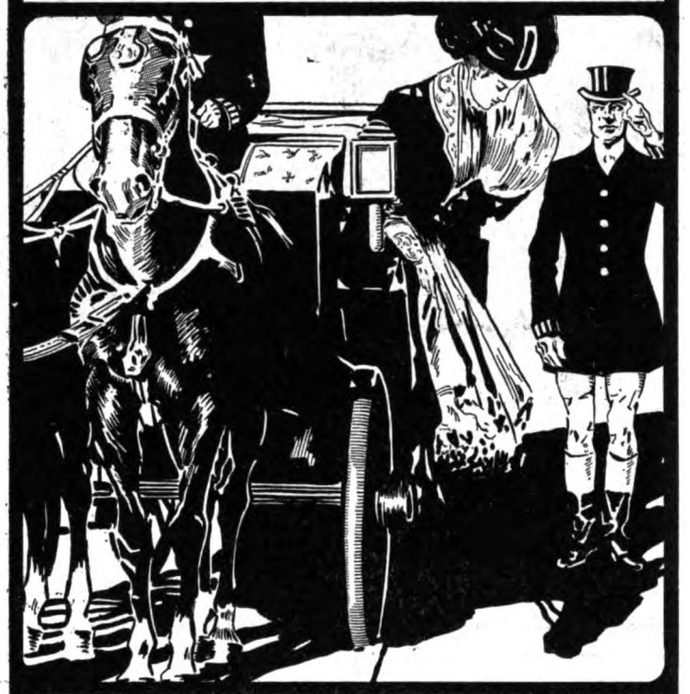
Send for sample section. Goodyear Solid Rubber Tires are sold by the length or by the reel. Get our special agency proposition. Write today.

The Goodyear Tire & Rubber Co.
Canal Street, Akron, Ohio

Branches and Agencies Boston, 261 Dartmouth St.; Cincinnati, 317 E. Fifth St.; Los Angeles, 952 S. Main St.; Denver, 28 W. Colfax Ave.; Philadelphia, 1402 Ridge Ave.; New York, 64th St. and Broadway; San Francisco, 506 Golden Gate Ave.; Chicago, 80-82 Michigan Ave.; Cleveland, 2005 Euclid Ave.; Milwaukee, 188-192 Eighth St.; St. Louis, 712 Morgan St.; Buffalo, 719 Main St.; Detroit, 251 Jefferson Ave.; Pittsburg, 5988 Centre Ave.; Omaha, 2010 Farnam St.; Washington, 1026 Connecticut Ave.; Atlanta, 90 N. Pryor St.; Louisville, 1042-51 Third St.; New Orleans, 706-16 Barrone St.; Memphis, 151-5 Madison St.; Dallas, 111 N. Akard St.; Baltimore, 881 Park Ave.; Kansas City, 16th and McGee Sts. St. Joseph, Mo., 316 N. 2d.

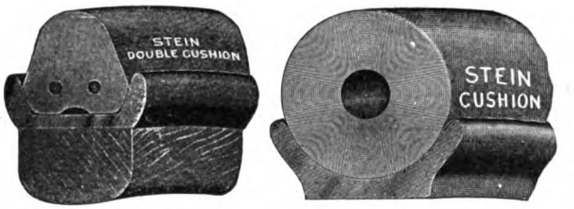
We call special attention to our new Endless Motor Truck Tire with hard rubber base. The retaining wires, being imbedded in hard rubber, can't tear out. This hard rubber and the soft rubber of the tire are so perfectly united as to form one piece.

STEIN DOUBLE CUSHION TIRE



EXPERIENCE

is the only true basis on which to figure if you wish to arrive at a fact.



Our story is best illustrated in our product. Be your own judge in deciding the question of tire supremacy.

Pure rubber must naturally be an important factor in a good tire. Rubber quality is only one of the many features that has won recognition for the

STEIN DOUBLE CUSHION TIRES

Be fair with yourself and your patrons. Apply the Stein Double Cushion Tire to your work and win favor with the driving public.

DO IT NOW.

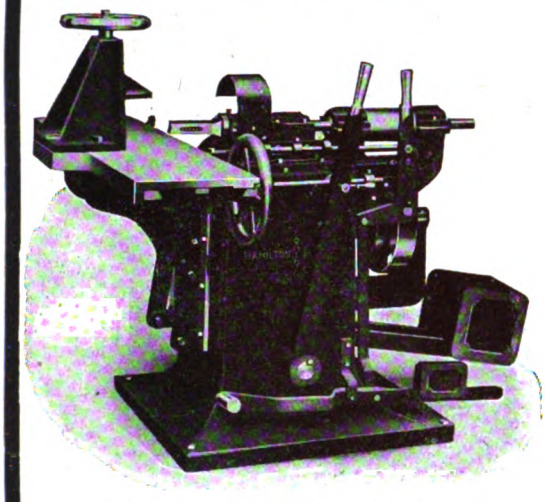
STEIN DOUBLE CUSHION TIRE CO.
AKRON, OHIO

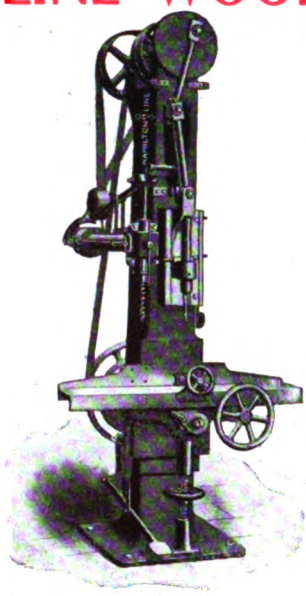
Digitized by Google

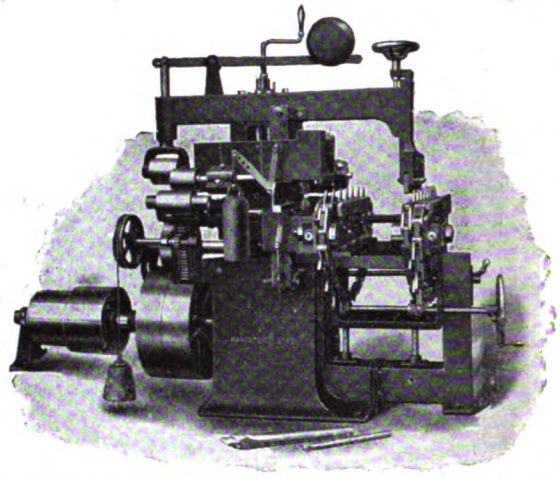
HAMILTON-OHIO LINE WOOD WORKING TOOLS

For Automobile Body and Wheel Work.

Carriage, Wagon, Hub, Spoke, Rim and Wheel Factories







Hamilton Hollow Chisel Mortiser No. 161 Hamilton Mortiser No. 158. Hamilton Spoke Tenoning and Mitering Machine No. 298

Disk Sanders, Belt Sanders, Spoke Sanders, Wheel Sanders, Gear Shapers, Scroll Eyeing Machines, Gear Rounders, Spring-Bar Boring Machines, Seat-Back Benders, Rim Planers, Rim Rounders, Rim Borers, Rim Cut-Off Machines, Wheel Boring & Screw Driving Machines, Spoke Lathes, Spoke Cut-Off Saws, Spoke Tenoning and Mitering Machines, Spoke Throaters, Spoke Facers, Wheel Facers, Wheel Tenoners, Hub Lathes, Hub Mortisers, Hub Borers, Wheel Boxers, Wheel Presses, Tire Truers, Tire Bolters, Spoke Cut-off Machines, Band Saws, Rip and Cross-cut Saws, Planers, Matchers, Moulders, Shapers, Boring Machines, Universal Wood Workers, etc., etc., etc.

THE BENTEL & MARGEDANT CO., Hamilton, Ohio, U. S. A.

C. A. WILLEY COMPANY

Color Grinders

AND MANUFACTURERS OF

SPECIALTIES IN CARRIAGE and CAR PAINTS, COLORS, Etc.

WILLEY'S SUPERFINE SPECIALTIES COACH COLORS TRADE MARK

92d St. Cars at Hunter's Point Ferry Pass our Factory.

Hunter's Point, New York City

CALL AND SEE US WHEN IN NEW YORK.

Digitized by Google

The Hub

Copyright, 1909, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. L. NEW YORK, FEBRUARY, 1909. No. 11.

THE TRADE NEWS PUBLISHING CO. OF N. Y
Publishers of THE HUB

J. H. Wright, *President.* G. A. Tanner, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

Jacob H. Klein, *Technical Editor.*

REPRESENTATIVES:

J. Henry Klunk. J. G. Tanner.

The Hub is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of Trade News Publishing Co.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

France.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

Germany.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

England.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

The Buggy.

The larger carriage builders especially west of Pennsylvania are, according to the observation of some observant carriage salesmen, looking more to their buggy output than a few years ago for that increased volume of business for which all are struggling. In other words the percentage of buggy output is said to be increasing with reference to other forms of construction. That buggy work on the whole is more profitable and more desirable and more permanent than other lines of carriage work seems to be conceded. When in past years slack times came builders felt less risk in letting buggy building run on. Stocks were not a bugbear and even when it became necessary to covertly force sales, buggies sold quick and well.

The development of rural and semi-rural life seems to work in favor of buggies. It has an individuality about it. The surrey is all right but it is seldom that the entire family desires to go to the same place at the same time. Individuals want to go fifty or one hundred times where the family wants to go once. Hence the fundamental and everlasting superiority of the buggy. Then the relative weight of the buggy and the surrey and the relative cost again gives the palm to the buggy.

Social obligations and commercial necessities, very small obligations in themselves, constitute the bulwark of the buggy. It has suffered less than any other vehicle during the depression and as builders now say, the first incoming orders and inquiries are for the buggy.

As Things Look Now.

All things considered the depression is a thing of the past. The figures frequently published of late give the value of the products of the soil for the past year at eight thousand million dollars. Whether these figures are exact or not, the amount placed to the credit of the American people is simply immense.

The railroads were not long in taking the hint. Most of the great steel car plants are running full time. The nearly one-half million idle cars of a year ago are now nearly all at work. The iron and steel mills are averaging around seventy-five per cent of capacity. A very large volume of iron and steel business is now held up for certain contingencies, among them tariff reductions and the completion of financial laws. Of course there will be no magical up-lifting, no mighty on-rush of orders for the simple reason that manufacturing capacity of all kinds has been enlarged sufficiently to enable orders to be promptly filled on short notice.

The country will profit by its lesson. Values will remain steadier. There will be more prudent expansion of capacity. The impulse to great commercial and manufacturing centralization is checked despite appearances to the contrary. Defects in our monetary system are in the way of correction. Whatever unfairness has been developed under our tariff system will ere long be eradicated by legislation. Conditions for 1909 are certainly more assuring than at this time in 1908.

Steadying Rates.

The railway managers have been fretting and chafing under the necessity of hauling a great deal of freight at less than they think it is worth. In years past they pushed rates up and down at their pleasure. They can still advance freights but it is not so easily done as formerly. The fixing of freights is now a complicated system and one road is obliged to have, practically speaking, the assent of other systems before advances can be made. From various quarters it is apparent the railroads are resolved on a general advance. The business interests have strongly protested against advances now or in the near future and have demonstrated that such advances would be unfair and unjust. Railroads generally have their own way but their way is becoming gradually narrowed by legislation and by greater commerce activities.

Improving Repositories.

It has been mentioned occasionally in these columns that there is a tendency to greater care in the appearance of repositories. To what extent the appearance of the automobile has to do with this interest is uncertain. Automobile dealers take full advantage of display and its effects. Many traveling salesmen have of late been noting the improvements in repositories and have inquired why they are manifesting this interest at this time. Under our present system of selling by traveling salesmen there is not the same necessity for conducting

Digitized by Google

or maintaining large salesrooms. The dealers are visited and are so accustomed to features that a little explanation added to the catalog illustration and description gives him a clear idea.

On the other hand there is more incentive to manufacturers to make larger displays because of the growing disposition of dealers, especially those doing business in the larger cities and towns, to visit the manufacturers. This disposition has been stimulated by the big shows. Display has a good deal to do with retail selling. The automobile people have taught carriage dealers a lesson and today a repository is something more than merely a place to store carriages while they are waiting for customers.

Cheap Wagons.

The expansion of agriculture has had a favorable influence on the wagon industry. For a very long time the standard farm wagon was a flimsy affair as compared with the wagon of today.

The organization of farming on a large scale, the building of elevators, the springing up of cities and towns and the development of manufacturing called for larger, stronger and more enduring vehicles. Bad roads also were largely the reason why wagon making made such a wide departure. About the same time the breed of farm horses improved.

The farm wagon of today is perhaps the most serviceable and the cheapest price of equipment the farmer buys. This cheapness is fully due to the invention of highly specialized woodworking machinery, the cheapening of iron and steel. No wonder that the farm wagon makers are complaining over narrow margins. The chances, however, are that the farmers will continue to employ wagons of excellent construction at moderate prices for a long time to come.

Enterprise Equal to Emergency.

When the present schemes and enterprises relating to the enlargement of the rubber supply are worked out, the rubber problem will be practically solved to all appearances. So important has the rubber supply problem become that even governments have lent their powerful energies to the expansion of rubber producing areas. Gigantic corporations have been formed, remote regions have been developed and vast amounts of capital employed to create a supply of rubber that would cover the expanding necessities of the world.

The doubling of prices within a few years has stimulated a world wide effort to supply the demand for which there is no other possible substitute. No reliable figures are available to indicate what the increased supply is likely to be but it would appear to be safe to say that prices in the future will be stimulative of an increased use of rubber in vehicular and all other channels.

Station and Depot Wagon.

The lesser currents in the carriage industry flow mostly in one direction. The buggy current is the largest and steadiest. Year in and year out its force and volume are about the same. The victoria and surrey currents if not feeble are light, though surries maintain their advantageous position in the industry with comparatively little special effort on the part of manufacturers, of late years, and especially within the past year or two. Station, depot and delivery wagons have developed into a volume of profitable business which was not foreseen years ago when these types of vehicles were on trial, so to speak, before the public.

It is only necessary to roughly compare the constructional features and styles of the present makes to realize the progress which has been made in these vehicles in the draughting room, the construction shop and the paint shop. It is sometimes said that the art of carriage construction develops in streaks, along certain lines, while other lines are neglected. However, from the standpoints of the draftsman and carriage mechanic and painter, there has been a harmony and a uniformity of development which constitutes these vehicle types of carriage building excellence, especially from the technical point of view.

Carriage building enterprise is stimulated by market demand and by conditions which arouse demand. Station and depot wagons are seen in all or most all semi-rural service and they are found to be indispensible and highly serviceable. Quite a number of builders have recently added to their shop facilities in these lines.

Beyond the Equator.

It is highly encouraging to note that it is to be the purpose of the incoming administration to take a strong hand in the development of trade possibilities in the Central and South American republics. Not only is the government to take a hand in this work, but private capital is turning its eyes to the southward for production activities on an enormous scale. Perhaps and most probably the construction of the Panama canal has a great deal to do with this aroused commercial interest in these great regions so long held under Latin dominance.

The world is coming to need what these countries can furnish, and European and American capital needs fields to conquer. There are vast possibilities to attract productive agencies and energies. The markets will arise, perhaps, as soon as we are ready for them.

Buggies in Mixed Car Lots.

The rule of railroads which makes a different rate for buggies shipped separately from farm implements is hardly a fair one. Many dealers in light vehicles handle implements and it would be a matter of convenience to ship buggies with implements of the same rate in mixed car lots. But railroads for some reason object to buggies going in mixed car lots and insist in separate shipments and at higher rates. This is an injustice which has attracted attention, but so far without avail.

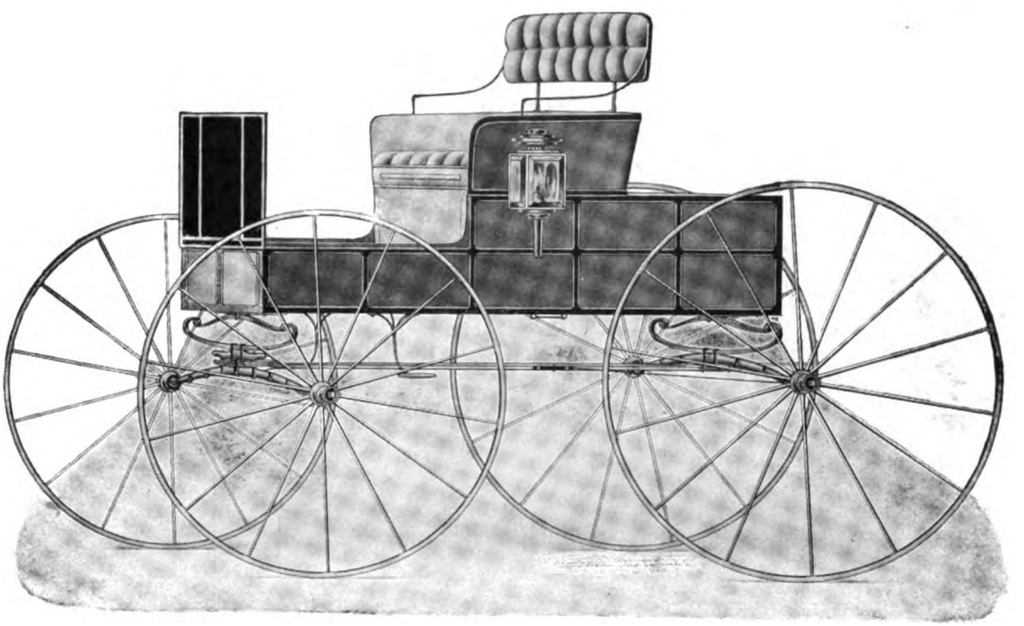
RUBBER-TANNED LEATHER.

A British publication states that a new syndicate has established a factory in London and is placing upon the market a new form of leather, for which it is claimed there is a big future, and which it thus describes:

The leather is submitted to a tanning process of the chrome variety, which preserves it; rubber solution is then worked into the interstices, rendering the hide thoroughly waterproof. The elasticity of the rubber permits of perfect flexibility and extraordinary toughness of some of the skins, especially of rabbit, goat and sheep skins. It is impossible to forecast the many uses for which this process may be available. Tests have been made for motor tires, soles for boots and shoes, pump washers, machine belting, miner's boots, etc., and it is probable that the multitude of articles that can be made of rubberized leather will, in time, create a further demand for rubber. This new material, it is thought, may also prove useful for motor and cycle tires, and it is almost impossible to puncture it, while it is said to be much more resilient and waterproof than ordinary leather.

Digitized by Google

Illustrated Carriage Section, February, 1909



VILLAGE WAGON.

Built by James & Meyer Buggy Co., Cincinnati, Ohio.



CUT-UNDER SURREY WITH AUTO SEAT.

Built by Sayers & Scovill Co., Cincinnati, Ohio.

Digitized by Google

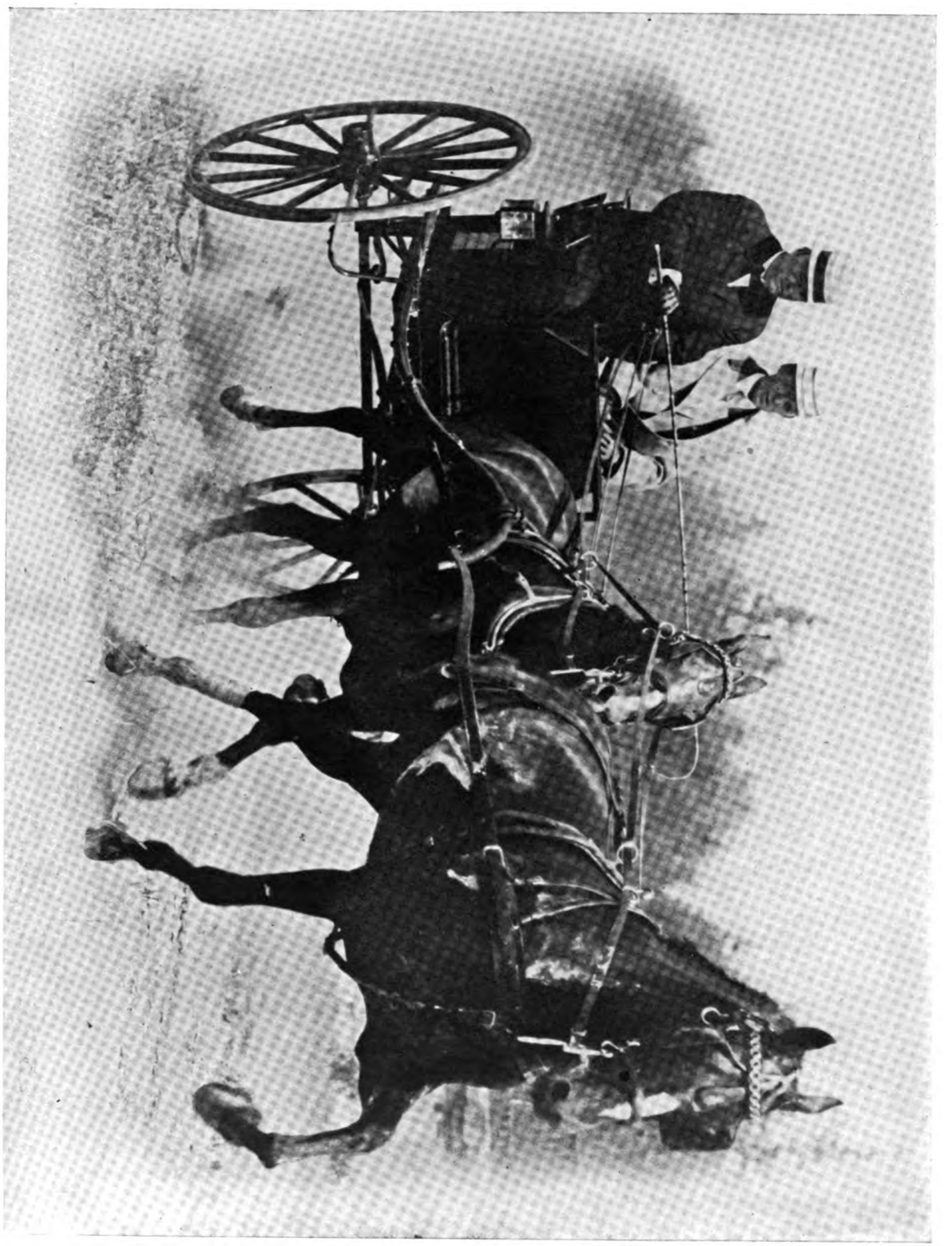


NOVELTY TWO-HORSE DELIVERY WAGON.



SINGLE MERCHANDISE DELIVERY TRUCK.

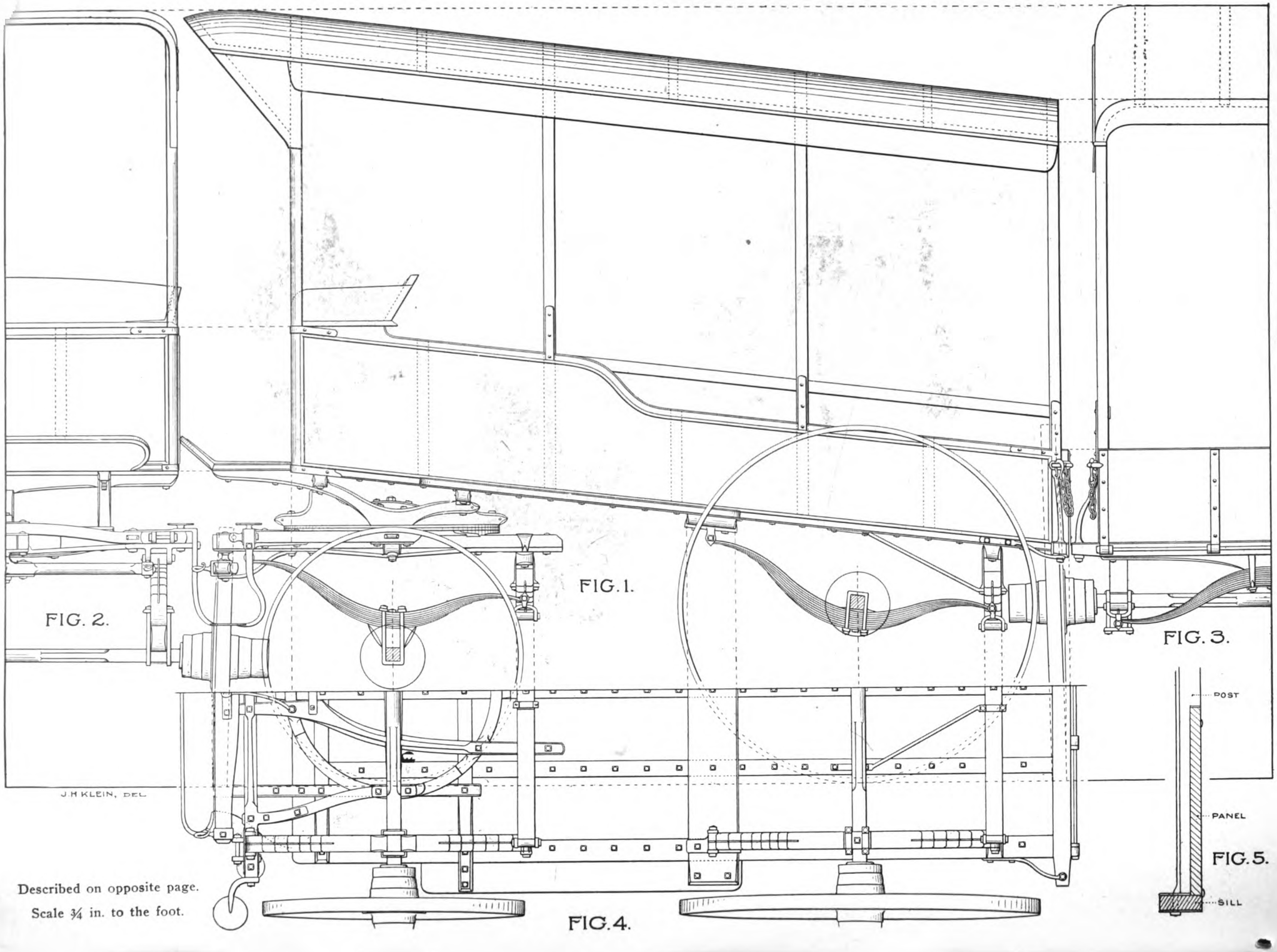
Digitized by Google



THE LIVELY SPORT OF TANDEM DRIVING.

Courtesy Rider and Driver.

Digitized by Google



Described on opposite page.

Scale ¾ in. to the foot.

Digitized by Google

Wood-working and Smithing

DESCRIPTION OF WORKING DRAFT OF ICE CREAM DELIVERY WAGON.

Drawing on opposite page.

On the preceding page we present a draft of a wagon especially designed for the transportation of ice cream packed in freezers, and is used exclusively by one of the largest manufacturers of that delicacy in New York City. It is peculiarly adapted to the purpose for which it is built, being constructed with the body placed on the gear at a suitable angle to permit the salted water from the freezers—which plays such havoc with the sills and flooring—to flow away readily. In vehicles where the bodies are hung almost horizontal the floor and lower inside is usually lined with heavy sheet iron. This, however, also soon yields to the destructive influences of the salted water, which must leave the tubs which contain the ice.

The side panels of the body are 20 in. deep, from the bottom of the sills, at the front end and 14 in. deep at the rear, curved in the center as shown in side elevation Fig. 1. The front panel is also 20 in. deep. These panels are of ¾ in. soft ash and are rabbitted into the corner posts and screwed to the sills from the bottom. The two center posts are lapped over the panels and secured to the sill by means of strap bolts, as clearly shown in sectional drawing Fig. 5. This drawing also shows the side sill and arrangement of plates, which are, top 2¼ in. wide and bottom 3 in. wide. A one-half inch half-round molding covers the joints between the panel, posts and sills and follows along within an inch of top margin of panel. The top edges of side panels are plated with ¾ in. half-oval iron and secured with screws.

An iron plate 1¾ in. by ¼ in. extends on the inside of body, from top of side panel to rear post. Two extra strainers are placed back of front panel and one between the posts on sides as shown by dotted lines. The four posts continue as bows for the top, with one 1½ in. short bow in between. The top is wainscoted and the whole covered with black oiled duck, which extends 4 in. down from molding. There are no curtains used. The tail-board is a plain ⅞ in. ash board.

Side sills are 3 in. by 1 in.; center sille 2¼ in. by 1 in. Front cross bar is 4 in. by 1 in.; rear cross bar 2½ in. by 1¾ in. Posts are 1½ in. square. Sills are plated top and bottom same as is a merchandise truck. A footboard 45 in. long and 4½ in. wide, supported by the rear cradle bar and front spring bar is used on side of body, as shown in plan Fig. 4. The body is 48½ in. wide and 9 ft. long outside of posts.

The gear is a standard style, with the upper carriage or cradle extended to receive the foot board and made to conform with the drop of body. Fifth wheel plates are 30 in. in diameter. Front side springs are 39 in. long with eight plates; front cross 43 in. long with nine plates. Rear side springs are 40 in. long with nine plates; rear cross 43 in. long with nine plates. All plates are 2½ in. wide and lengths given are from center to center.

Wheels are Sarven pattern with 1⅞ in. spokes in front and rear, other parts being standard for these sizes of wheels. Tires are 2 in. by ¾ in. Axles 1⅞ in. front, 2 in. rear. Track, outside, 5 ft. 2 in. The body and gear in this instance were painted red, striped black, but of course, customer's taste must be gratified.

The Fish Brothers Wagon Company's plant, Racine, Wis., which has been shut down since Christmas for inventory, resumed operations on January 23 with a full force and possibly full time. This gives employment to about 175 men.

REPAIR SHOP CHATS.

Repair men are often called upon to make spokes for broken wheels, and sometimes are obliged to construct the wheel complete. Then, again, it is necessary to only substitute one or more spokes for damaged ones. It is convenient to know how to



Fig. 1

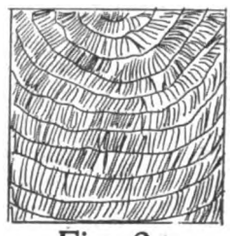


Fig. 2

make the spokes, otherwise there will be delays in sending to the manufacturers or in getting a spoke made elsewhere. The writer has seen some very crude jobs in the making of one or more spokes for wheels. Sometimes the inserted spoke is completely off in size, pattern and finish. Often the wood is different

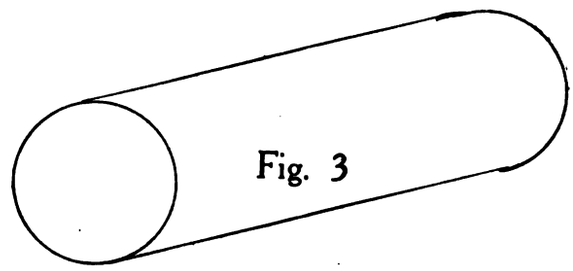


Fig. 3

from that of the rest of the wheel. While it is not important that the wood be matched, it is desirable that the factors of form, size and weight comply with the same factors in the original spokes. Hence, in the making of the spokes the workman should have his timber selected and his pattern made with a view of

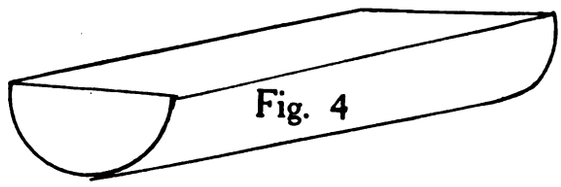


Fig. 4

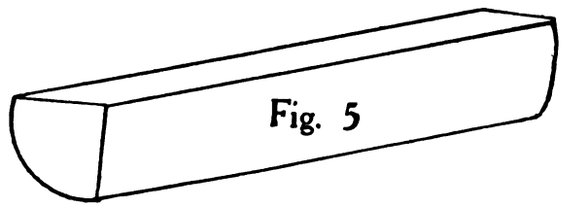


Fig. 5

making a spoke or spokes to harmonize with the spokes already in the wheel.

Nowadays the spoke billets are sawed out and time is saved. Formerly the spokes were split out and a man had to do a deal of hacking and wasting of stock to get down to the proper sized spoke. It will of course be necessary to select stock free from sap, and elastic. Butt ends of oak timber can be used to advantage, providing that the stock is clear. In fact, some men go

Digitized by Google

to the shops where bolsters and other wagon work is made for the purpose of getting the choice butts for making spokes. These pieces are usually well seasoned and in shape for effective working.

As to the shaping of the spokes, Fig. 1 illustrates a section of a butt sawed into a spoke bolt. Fig. 2 is another view showing

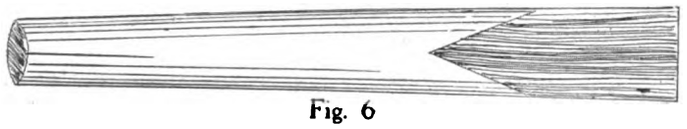


Fig. 6

the formation of the grain. Fig. 3 shows the spoke turned down to size. The same principle may be applied to a billet of sufficient size to make a number of spokes. For example, in case that four or eight spokes are desired, the quarter block is sawed into a billet large enough to contain the required wood for the several spokes. Then the billet is turned to the convenient size

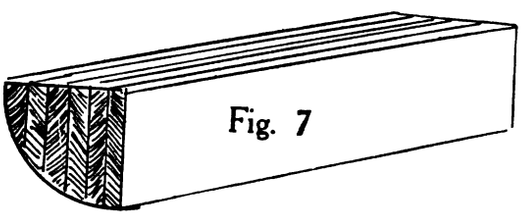


Fig. 7

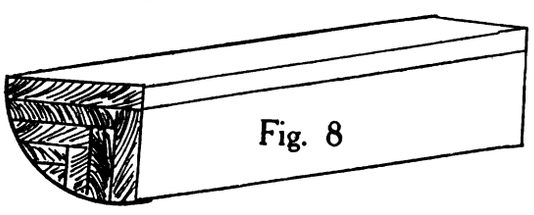


Fig. 8

for handling and is sawed through the center, as in Fig. 4. Next, the half-section is quartered as in Fig. 5.

Then comes the flitching of the quarters. Flitching consists in sawing the pieces as in Figs. 7 and 8. Fig. 7 shows the incorrect way, and Fig. 8 the correct way. It is astonishing how many men adopt the incorrect method in their haste to produce a few spokes. More time should be taken in working the saw

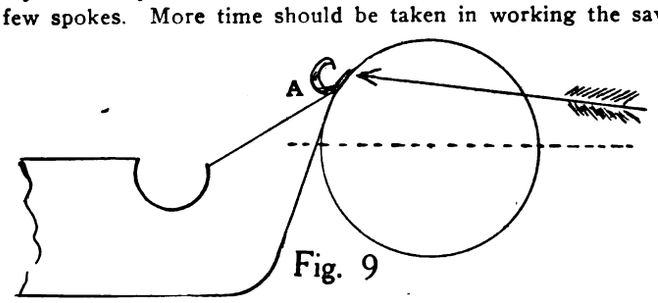


Fig. 9

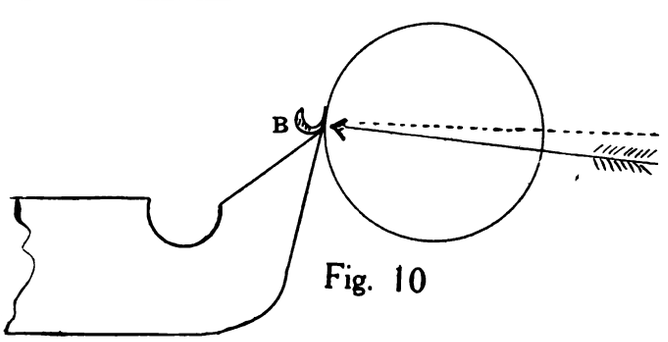


Fig. 10

on the wood, so as to get the result as in Fig. 8. This assures straight grain.

As to the turning down of the pieces, Figs. 9 and 10 afford examples of incorrect and correct methods. Fig. 9 shows the point of the cutting tool excessively high on the work, so that the stock is trimmed off roughly, as at A. The rake and clearance are not correct. Fig. 10 shows the rake and clearance of the cutting tool properly harmonized with the stock in process of being turned. The point of the tool contacts with the work at B.

After the spokes are turned, the repair man can put on any finish he desires. The habit of sending out a wheel with the new spoke or spokes unpainted or unfinished, is not to be commended. The customer must go to a paint shop and get the spoke painted, and this creates bother and expense for him. If the repair man, who is handy at all work of this kind, puts in a little department of painting at the shop he can readily finish off the new spokes and make a finished job for the patron. The finished job is always more readily and cheerfully paid for.

GOODYEAR TIRES WITH NEW RECORD.

Goodyear hard rubber base tires have enabled a motor truck to make the longest winter run ever attempted by a commercial motor vehicle. Through ice and snow, over ridges frozen hard and sharp and through mud and sand and all kinds of roads, they safely conducted the vehicle, laden with 100 Goodyear air bottles for the Grand Central Palace Show, from Pontiac, Mich., to New York, arriving there Dec. 30. The tires stood the test perfectly. The remarkable tough tread, formed as it is by a secret process, did not suffer a single severe cut from contact with the knife-edged pieces of broken ice encountered during much of the trip.

The firm vulcanization of this thick, resilient tread to the hard rubber base, which contains the retaining wires, making the whole practically one piece, proved that the tire will do all the Goodyear Company claims for it in the matter of clinging to its fastenings under the severest possible strains.

The metal cleats, too, were a positive safe-guard against the creeping of the tires and the method of locking the rubber to the rim so well withstood the terrific wrenching in the rough roads that the chauffeur had not a single instance to report of a tire coming off or even working loose.

The truck left Pontiac Dec. 20, arrived in Cleveland the 21st, and was due in Buffalo the 22nd. The roads between Cleveland and Buffalo were almost impassable, however, and the truck did not arrive until the 23rd. The chauffeur found it necessary to make this part of the journey very slowly in order to prevent overturning or other serious accident. The tires stood the test perfectly and not only did not show the wear themselves, but had protected the rims so well that the latter were not chipped or splintered.

The utility and general satisfactoriness of the Goodyear air bottle, with 100 of which the truck (a rapid) was laden, was thoroughly demonstrated in the Glidden tour as a labor saving service by which compressed air is used for tire inflation, doing away with the hard work involved in the use of an air pump.

LARGE INCREASE IN VEHICLES.

According to a statement issued by the Bureau of Manufactures, Washington, D. C., the exportation of carriages, buggies and wagons amounted to $4,680,764 for the year ending June 30, 1908, against $4,217,377 for the previous year.

AMERICA'S EXTENSIVE USE OF AUTOMOBILES

It has been estimated that there are at present no less than 150,000 automobiles in use in America, and another estimate places the probable production of the forthcoming year at 75,000 new cars. On this basis, the parent industry is made to loom very large. But when it is considered that in the heydey of the carriage industry no less than 1,000,000 buggies a year were turned out during four consecutive seasons, it appears that the business of vehicle production enjoys possibilities which the automobile section of it has by no means begun to exhaust even yet.—Motor World.

Digitized by Google

PAINTING AND UPHOLSTERING

WINTER ACTIVITIES IN CARRIAGE PAINT SHOPS.

Winter, to be sure, brings its discontent, but to the carriage painter it likewise brings its advantages. First of all, perhaps, it enables him to survey the past season's defeats and victories, and to prepare to profit by them, as he inevitably must profit by them if he would make his business increasingly successful.

Winter should never be a season of passive inactivity, and in fact it need not be such. Rather should it be a period of hard work, and, to a large degree, of preparation. Man succeeds through the labor of preparation. Battles are won by a state of preparedness more than by superiority of arms or power of numbers, and this inexorable rule applies precisely to the modern business of painting vehicles.

Possibly the bookkeeping system of the business is defective, in which case winter affords the opportunity to mend matters in this respect. The paint shop without a bookkeeping system accurate, comprehensive and complete is like unto the ship at sea minus a rudder. This system manifestly need not be an elaborate one. A simple entry system will suffice, supplementing this with a book in which all jobs received are entered, together with a complete inventory of all the fixtures and furnishings brought to the shop with each vehicle. This latter practice will be the means of safeguarding the interests of the painter and will many times save him much valuable time otherwise lost in a fruitless attempt to locate the supposedly missing article. A carbon copy of this inventory should be furnished the vehicle owner. An "observation book" will also be found of value. In this may be noted data concerning any unusual condition of a job, or any special circumstances likely to be of importance to the painter at some future time. Special processes, or uncommon developments, as they relate to any given job, should be given conspicuous attention and noted in such detail that no possible misunderstanding can exist in reference thereto. Granted that this bookkeeping involves no little clerical work, the fact remains that it pays.

Any man engaged in business, however small it may be, derives, or should derive, a sense of security and protection from a set of well-kept books in which the life history of his enterprise is daily open before him. It is an actual asset fairly as computable in dollars and cents as any other investment he can muster.

The winter months are specially inviting in that they furnish an opportunity to improve and add to the shop's equipment of labor-saving devices. All this apparatus should be thoroughly overhauled and, if necessary, added to. The shop, to be kept at the top-notch of efficiency, should in no respect lack in the matter of conveniences which, while not immediately productive, contribute to the profit-earning capacity. And there is no time like the days of winter for installing labor-saving devices.

During the winter the painter may well devote a portion of certain days each week to looking up and getting into personal touch with the local vehicle owners and users.

The personal element is an important feature of advertising one's business and in soliciting business. The medium of newspapers, hand bills, postals, and various other advertising agencies are good and worthy of commendation, and especially the newspapers, but personal canvassing is the most effective way of getting business. Personal acquaintance with one's trade is a splendid advertisement. Indeed, it is unsurpassed.

The winter months are in another way propitious for the carriage painter. They yield opportunities for making heavy painting repairs not afforded, as a rule, at other seasons.

When the spring rush of work is on, the burning off and heavy repainting of vehicles is something of a check to the output of work of lighter painting repairs. Burned off jobs occupy valuable space in the paint shop for a protracted period. In the winter such work is comforting and helps fill up the vacant spaces.

As soon as the cutter and sleigh painting is well out of the way, it is a wise and profitable policy to anticipate the requirements and exactions of the coming season. Thereby make the paint shop a hive of industry rather than a mere retreat from the inclemency of the weather.

PAINT AND VARNISH TESTS.

There are tests and tests. There are tests of paint and of varnish made by painting and finishing narrow strips of boards and exposing them to the weather for more or less protracted periods, which tests are neither conclusive nor of great value, generally speaking. Other tests are accomplished by painting and varnishing strips of glass, and by varnishing strips of glass without painting. Such panels are usually exposed for weather tests, and while to a certain extent they demonstrate certain defects or weakness or service resisting qualities, as the case may be, they lack conclusiveness, in that they do not offer the conditions enforced by actual service and therefore fail to lead up to such results as are met with on the highways and in the repositories.

If a test, say, of varnish could be made by applying the material to the carriage, making the necessary data, and then following the condition of this varnish up under the changes which it is sure to undergo during the turmoil and stress of service, something really practical and of permanent value might accrue. This however, is not always possible, inasmuch as the vehicle containing upon its surface the test material may go, and, indeed, under the rapacious attacks of modern competition often does go to another shop for the next varnishing.

If it were possible, as in car work, to make a comparative test of varnishes by applying to one-half of the surface a certain make of varnish and to the remaining half another make, and following the wear of these varnishes out into the daily grind of the highways, and to apply these same varnishes to their respective surface when the vehicle returned to the shop, the test could be made definite and conclusive.

The carriage painter has always been placed at a disadvantage in the matter of testing materials other than superficially, for reasons which will occur to readers of the above.

That he has succeeded in making his work wear durably is due far more to his judgment based upon practical knowledge acquired in handling and observing the general characteristics of materials than to anything that has reached him through the instrumentality of tests carried out exhaustively.

BRUSHES AND THEIR KEEPING.

Years ago visitors to the carriage paint shop witnessed the "pig-trough" receptacle for keeping round, oval, and flat bristle paint brushes. For the most part that sort of a keeper became obsolete, as it deserved to, because in plain terms it was, and is, unfit for the purpose as, in fact, are all other keepers which necessitate standing or in any least part resting the end of the brush on the bottom of the reecptacle. The brush should be hung in the water or other keeping material, with the end of its stock swinging clear of any bottom or side of keeper. A cheap and good device may be provided by using a common

Digitized by Google

tobacco or candy pail and driving from the outside a row of 8- or 10-penny nails through the wood to the inside of the pail. Bore a hole through the handle of the brush and suspend the tool from the nail, and there you are, safe and well cared for. Use a cover over the pail to exclude dust and dirt, and change the water in which the brushes are kept every few days to prevent souring. Camel's-hair brushes should in like manner be suspended on wires running through the handle and the receptacles in which they are kept should have tight-fitting covers. A color brush, once it has become broken in, having had the "heel" saturated with a little oil paint, can with the least trouble to the painter be kept in a bath of water—pure, clean water. Keeping them in oil enforces the practice of cleaning out, before each using, with turpentine, which practice is scarcely to be relied on for eliminating all the oil. Turpentine has been recommended as a brush preservative, but it is too harsh in its action and rots the hair. Raw linseed oil is to be preferred to turpentine for a brush-preserving medium.

Varnish brushes are kept at their highest point of efficiency, and always ready for immediate use, when immersed in finishing varnish furnished by the manufacturer without the addition of dryers. Such a preservative maintains its fluidity without apparent change, an important advantage in the perfect preservation of all varnish brushes, and it yields the brush ready for immediate use without other manipulation than a simple preparatory wiping over the edge of the cup. Air-tight and dust-tight receptacles should in all cases be provided for varnish brushes.

QUALITY.

A very important hint to the painter is conveyed in the Valentine announcement on another page in this issue. It has never been a slogan with the representatives of this company to extol the merit of cheapness at the expense of worth. With an organization and capital that makes the compounding of varnish a matter of the most scientific economy, the product is necessarily cheap in the proper sense. It is worthy, not worthless for its uses. That is what quality means and it commands its price the world over in everything. The Valentine goods have consistently stood by this standard, and those who are persistent users of the goods would not have it otherwise, as every business man seeks insurance. Varnish insurance spells Valentine.

PIONEER FIRM CELEBRATES OLD AGE AND NEW IDEAS.

The Joseph Schwartz Company, Ltd., New Orleans, La., one of the pioneer wagon houses in the South, celebrated its fifty-third anniversary and the addition to its regular line of automobiles with a banquet at Hotel Denechaud January 16.

It was a banquet to the employes of the firm. Joseph Schwartz, the president, sat at the head of the table, A. Aprill, the oldest employe was toast master.

JUST A PICTURE.

A most artistic and at the same time practical hanger has been received from the F. O. Pierce Co. of New York. While the purpose of the company was that of illustrating the uses of the celebrated "Uzatona" red, the artist has carried his work to a degree of perfection that is pleasing to the eye and might really be passed on as a beautiful picture.

Imagine if you can the possibilities of this scene—the lake with its pleasure craft—the distant mountains with surrounding scenery—a railroad crossing and boulevard—the passing in full action of a smart four-in-hand coach and modern motor car. Well, if any carriage, wagon or automobile builder has not received this picture the F. O. Pierce Co. would be glad to know it. Would you like one? It's yours for the asking.

TRIMMING A LADY'S DRIVING PHAETON.

A lady's driving carriage should engage the designer's whole thought both in the design of outline and in construction, while the upholstering should have his special artistic study to help the trimmer to fashion the squabbing to a comfortable pad-

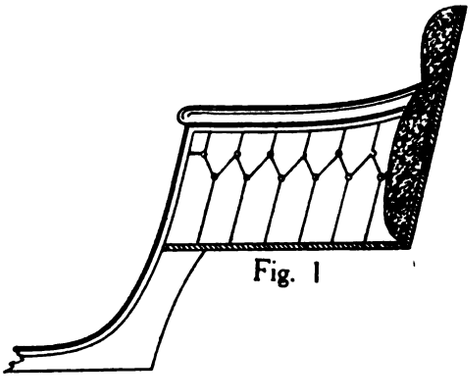


Fig. 1

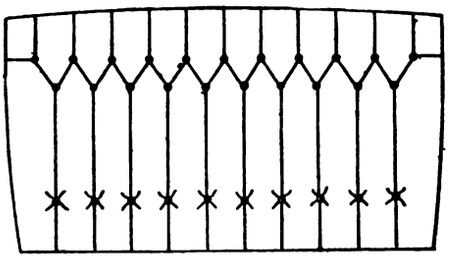


Fig. 2

ding and artistic surface. This is imperatively necessary in a lady's carriage, because it is to their tastes in outward garbing that the upholstery of a carriage appeals.

In patrolling the boulevards of fashion, a carriage is required to be rich in every device of the coachmaker's art, so far as

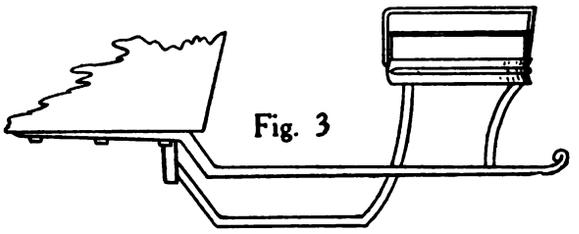


Fig. 3

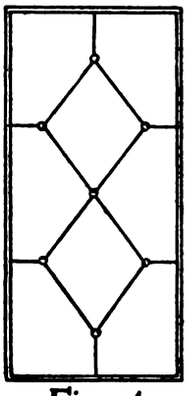


Fig. 4

it can be individually enhanced. The high-actioned horse demands a richly designed carriage to harmonize in attachment, and as trimming is a conspicuous dressing in the finish of any carriage, it is necessary to embellish it to the fullest in this artistic particular.

Fig. 1 shows the design of quarter squab and elbow roll, together with the end section of the back squab, Fig. 2. The

Digitized by Google

design is in column pleating, finished with harmonizing blocking on the elbow-line. The elbow roll is worked on individually after the squab is fixed in, the whole being finished in seaming and pasting lace.

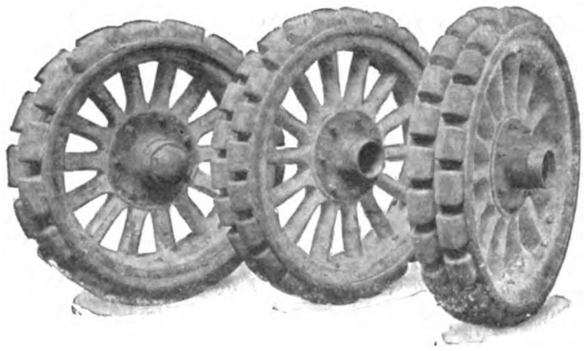
Fig. 2 shows the back squab, which is set out in column pleatings and top proportionate blockings to harmonize. The bottom of the columns are dressed in button centres only, to throw away the fullness of the centre of the squab forward in the stuffing.

Fig. 3 shows the hind rumble as ironed up on the pumphandle and seat stays. The end depth of the cushion and depth of side rail are also shown. Fig. 4 shows the style in which the rumble seat cushion is made.

This trimming in its entirety should be worked out with artistic cleanness to give a smart and telling effect.

SECTIONAL MOTOR TRUCK TIRE.

One of the big features of the recent automobile show was on the outside of the building in the form of a ten ton coal truck traveling through snow and slush under full load on Kelly-Springfield Sectional tires. If ever the merit of a tire was demonstrated, this was the occasion. Spectators marvelled at the ease with which the vehicle moved and were astonished to note the entire lack of evidence that is always looked for in heavy self-propelled vehicles, that of slipping and skidding. Under



the heaviest load the Kelly-Springfield Sectional tire always responds to the motors and advances with the ease of a horse drawn buggy. The Consolidated Rubber Tire Co. of New York and Akron are much elated over the success of their sectional tire and would be pleased to supply all particulars to builders of commercial motor vehicles. To say that this invention solves the solution of the heavy commercial truck proposition is only putting it mildly. All builders of commercial cars should give this subject immediate thought and consideration. See illustration of the "Hewitt" tire truck in company's advertisement.

WILL ENTER AUTO FIELD.

Mr. Chas. P. Henderson, of the Henderson-Hull Company, Savannah, Ga., is no longer actively connected with that concern, and will soon take up the automobile business at Savannah.

Mr. Henderson says he will retain his stock in the Henderson-Hull Company, and will appreciate the continued patronage of his many friends throughout the South.

Having connected himself with leading capitalists in Savannah, it is Mr. Henderson's intention to carefully investigate conditions and familiarize himself with automatic construction before engaging in the manufacture of a machine suited to the South.

A. C. Ryan, Traer, Ia., recently opened a branch house in Gladbrook and placed J. J. Hanus in charge of the business there. Mr. Ryan has also just purchased Mr. Shimmer's interest in the Shimmer & Ohrt building in Reinbeck, where he will open another implement store.

OLD TIME CARRIAGE WORKMEN.

The Proprietor, With All His Money, Played Only a Minor Part in Shop Esteem.

By J. F. Montague.

"The Story of The Hub," giving its career in carriage literature, as told in October issue—its fiftieth anniversary number—is most interesting and graphic. Between the lines one can trace the development of the carriage industry in this country. What a flood of memories the reading recalls. The mere mention of familiar names conjure to the mind a scene replete with honest work, competent workmen and a class of carriages whose finish compared favorably with those of the present day.

In beauty of outline, construction and comfort these forerunners of the modern high grade carriage were, of course, behind the times, compared by to-day's standard of what is considered the proper thing. But I speak of the handiwork of the mechanic, which is those halcyon days was something to be proud of. Without the aid of many of the labor-saving devices machinery has conferred upon the carriage building trade, the woodworkers and the smiths fashioned and finished their respective parts with an eye single to the position they would occupy, which must conform to the rules governing the proper distribution of weights and the prevailing style of vehicle, and, also, the requirements of the painter, who, in turn, built up a surface that was a joy to behold and a privilege to assist in producing.

And the body finisher, he stood upon a pedestal that even an occasional departure from the straight and narrow right of way staked out by the "Sons of Temperance" could not jostle. When he acquired that final touch, the horizontal last stroke of the varnish brush which transformed the diluted gum into a French plate glass finish, why, he was "It," and occupied an enviable position among his fellow workers.

The proprietor of the factory, with all his money and authority, was content to play a poor second in popular esteem in and about the shop with this skillful manipulator of the varnish brush. Recognizing the commercial value that a first-class workman's connection with the business added to the reputation of his house, he took special pains to foster, by stimulating with fair treatment and generous wages, his finisher's pride in his calling and ambition to allow no one to turn out better work.

To the intelligence of the body and gear finishers in those days, who insisted upon proper surface to display their skill, the carriage trade to-day owes its fame. It is universally conceded by both builder and buyer that it is the finish of a carriage that determines the choice and appeals to the critical buying public. Many of the graduates of the old school custom factories have been instrumental in building up the reputation of the builders of high class, medium grade vehicles, by employing the same methods upon standardized carriages, producing a finish not approaching that of the high grade custom job, but imitating it so closely that the average buyer could hardly distinguish the difference, with the result that a very large demand for the lower-priced article was created.

Many establishments, short on the "know how" end of the business, sprang into existence. Most of them, however, fell by the wayside. Others degenerated into shops which furnished a nondescript creation that met with little favor. They were not in the same class with those made by the frankly cheap vender, who was shy on all that goes to make a popular priced vehicle popular, but too busy dipping, assembling and shipping his wares to pay any attention to complaints coming from that class of customers who expect something for nothing

More than twenty years ago, throughout various States in the east and middle west, the writer has mingled with men of many nationalities, working in high grade custom factories, who were masters of their calling. In Wisconsin my first lessons in car-

Digitized by Google

riage and sleigh drafting were given me by a Dane named Johnson, a first-class carriage body builder, whose single and double Albany and Portland sleighs and cutters bearing the F. P Wallis Co.'s name plate were distinguished by their individuality in sweep of outline and general contour.

These points were especially noticeable in the Albany sleighs with their graceful swan-like curvature of expansive front and symmetrical sweep of broad back and convex sides, which offered a tempting background for the selection of colors artistically displayed, and invited the best efforts of the skillful workman who striped and embellished with hand-painted scrolls these contributions of skill to the sleigh builders' art.

With the Hall & Bartlett people, of Rockford, Ill., whose product was in the same class with that of the best eastern carriage builders, old man Johnston, who had learned his trade in London, England, and with an experience covering many years in the best eastern factories of this country, was noted for the skillful manner in which he could put a coat of varnish upon the landaus and victorias that were manufactured by that concern. Tommy Thorston, a Norwegian, and Ole Anderson, a Swede, were Johnston's understudies, and no slouches with the varnish brush.

"Hank" Ernest, the premier fine liner in that locality, could negotiate a "double fine" up a spoke to the queen's taste. Smith who learned to stripe with his left hand, after using his right for the same purpose for many years, until an accident deprived him of the forefinger of that hand, could, barring "Hank," draw a line with the best of them.

"Pony" Ward was a good one, too, until in a moment of weakness, tempted by a larger salary, he went to work for the agricultural implement people. He made good money, but lost temporarily, the cunning of his hand, like many another who from choice or circumstances, has made similar swaps.

Irishmen as heavy body builders in this factory worked side by side with "Cannucks" and Scandinavians in the wood department. In the smith shop, as forgers and finishers, the same nationalities were represented by clever, competent workmen. Ole Peterson, a Swede, was a blacksmith's finisher, whose work gave delight to the painters. And the trimmers, too, they were on to their jobs.

Tom Connolly's factory, in Dubuque, Ia., manufactured the finest line of custom work west of the Mississippi River. Mike O'Mara, the genial foreman of the wood department, and a most excellent workman, stimulated my ambition by lending me copies of the Coach Makers' Magazine, and giving me good advice. O'Mara, who was a Massachusetts man, not only knew how to build a carriage body, but also how to produce a surface that made it possible for the painters to secure a perfect finish Jim Hogan, Johnny Scanlan and others under Mike's tutelage, became fine workmen.

Mike O'Rourke, foreman of the smith shop, and afterwards general superintendent of the factory, was a fine workman and able manager. Jim Dunn, who made a "ten strike" in politics subsequently, and Joe Byrnes, together with a crew of fine workmen, forged and finished the various parts in a thorough workmanlike fashion. Gus Brulo, a Frenchman, had charge of the trimming department. Gus was a splendid workman who trained his assistants in a careful, painstaking manner.

Steve Driscoll, who succeeded the versatile "Doc" Rodier as foreman of the paint shop, was a capable workman who had learned his trade in the east. The writer thought at the time and to this day cherishes the same belief, that Steve was the peer of any body finisher of that period or since. Steve was loyal to the men under him and exacted the same consideration for himself from them. Jack Welch, Johnny Smith, "Old Man Scant," Johnny Cloutier, Jim Doyle and an aggregation of lesser lights turned out, under Steve's guidance, as fine a lot of finished carriages as one could find anywhere.

The workmen of that day and time were carefully taught to understand the fundamental principles underlying each separate operation that was required to produce fine work.

Their training in the factories where they learned their trade was, as a rule, supplemented by the knowledge they picked up in other factories, their proficiency not being considered fully rounded until they "swung around the circle," working for a long or short time in the best shops in the country.

This plan contributed to their education by making it possible for the mechanic to compare shop practice and methods, thus enabling him to sift and select a fund of reliable and accurate knowledge which could be secured in no other manner.

The character of the factories which supplied this first-hand information was sufficient guarantee of the value that class of mechanics had, and to this day have a pride in their craft which shows itself in their refusal to associate with incompetent workmen, and makes it impossible for them to tolerate with any degree of patience and provincialism of the chap who is ignorant of the principles of his trade, but is not aware of the fact, and fondly imagines he is fooling those whose training has been acquired along correct lines.

The specialist was not in evidence to a very alarming extent in the best custom shops at that time. A workman might excel in some one respect and show a decided inclination to follow his preference. He could, nevertheless, turn his hand to anything in his line.

The advent of the wholesale carriage factories, however, created new conditions which called for greater economy of effort in order to supply the volume of work that the demand for the popular-priced vehicle called for. The standardizing of styles, sizes, colors and trimmings, together with the use of interchangeable parts made it possible for each department to cut down the cost of manufacturing in direct ratio to the output of the factory and the efficiency of the workmen.

Here the services of the man who had been trained on fine work was called for. The body builder could tell to a nicety just where to place the labor where it would do the most good, and to abstain from putting valuable time where it was not necessary to show a fine finish. He gave the painters a ground work which responded to their efforts to build up a full, plump finish.

Each department followed the same system guided by capable foremen who possessed that nice discriminating sense which only proper training and native intelligence can develop. The natural aptitude of a skillful workman was switched into a channel where the play of his exertions along congenial lines resulted in work which was excellent in quality and satisfactory in quantity. This was the evolution of the specialist. More and better work was produced, with a corresponding increase in the wages of the workman.

This development of the working capacity of the production force is carried still further by the foremen who, understanding the overlapping influences of the different divisions of labor, guard against the loss of time and material that a lack of knowledge regarding the relation of other departments involves.

AUTOMOBILE AND CARRIAGE INDUSTRY.

The exportation of automobiles and parts from the United States for the fiscal year ending June 30, 1908, amounted to $5,277,847, against $5,502,241 the previous twelve months. An official of the American Motor Car Manufacturers' Association states that 52,000 motor cars, with a value of $105,000,000, were produced in this country in the calendar year 1907, compared with sales of only $8,000,000 in 1903. The turn-out this year will be about the same as in 1907, but next year's production will possibly reach 75,000 cars. The same official adds that, in addition to these vehicles, for the past five or six years a million buggies have been made and sold by American builders annually. The exportation of carriages, buggies, and wagons amounted to $4,680,764 for the year ending June 30, 1908, against $4,217,377 for the previous fiscal year.

Digitized by Google

General Topics of Interest to Trade

ANNUAL ELECTION OF OFFICERS IN THE CARRIAGE TRADE.

Milburn Wagon Company.

At the annual meeting of the stockholders of the Milburn Wagon Company, Toledo, O., held Jan. 19, a fine report was presented by the management which made the announcement that since the first of the year orders were coming in at the rate of three carloads a day. It was explained that if business keeps on reviving at this rate the plant would soon be running to its full capacity.

The present officers were re-elected: President, F. D. Suydam, Sr.; vice-president, T. W. Childs; secretary, H. W. Suydam; treasurer, Frank Hafer.

Pekin Wagon Co.

The annual meeting of the Pekin (Ill.) Wagon company was held Jan. 21. The officers for the ensuing year were elected as follows: President, H. G. Herget; Vive-President, Adam Saal; Secretary, Henry Birkenbusch; Treasurer, U. J. Albertsen; Manager, W. A. Ebbert. Mr. Ebbert comes to Pekin from Owensboro, Ky., where he successfully conducted a large wagon manufactory. The wagon works started up Jan. 18, after a shutdown of several weeks to invoice and make repairs. About forty men are now employed and the number will be increased gradually. The company has more orders on hand than at this time last year.

Watson Wagon Co.

The Watson Wagon Co. at its annual meeting at Canastota N. Y., declared a dividend of ten per cent. All the officers and directors were re-elected, as follows: A. A. Keesler, president; Levi S. Chapman of Syracuse, secretary and treasurer; J. C. Rasbach, assistant treasurer; other directors, LeGrand Colton, C. F. Pattengill.

The outlook for the business of the company is more encouraging than it was last year at this time.

Champion Wagon Company.

The directors of the Champion Wagon company of Owego, N. Y., have elected the following officers: President, Hon. George F. Andrews; vice-president, W. A. Smyth; secretary, James A. Bassett; treasurer and general manager, Theodore D. Gere.

Omaha Implement and Vehicle Co.

At the annual meeting of the Omaha (Neb.) Implement and Vehicle company the following officers were eleced: President E. A. Hatfield; first vice-president, F. L. Heller; second vice-president, Henry H. Van Brunt; secretary, J. E. Baird; treasurer, C. C. Troxell. The members of the executive committee are: W. J. Boomer, T. G. Northwall, Fred H. Davis, F. H. Keys, C. L. Rees.

Advance Motor Vehicle Co.

The Advance Motor Vehicle Company, of Miamisburg, O., elected the following officers at its annual meeting: George Behlen, president; J. A. Kauffman, first vice-president; Jacob Klee, second vice-president; Col. T. J. Kauffman, treasurer; H. T. Kincaid, secretary; S. W. Zent, general sup't and mechanical engineer.

This company is building a runabout and touring car and expects to have same ready for the market early in spring.

Robinson-McGill Buggy Co.

The Robinson-McGill Buggy Co., a new corporation at Columbia, Tenn., formally organized Jan. 26, at its place of business, by the election of John L. Robinson, president; J. M. Swain, of Chapel Hill, vice-president; John N. Pigg, secretary and treasurer. The board of directors is composed of John L. Robinson, J. M. Swain, John N. Pigg, R. A. Swain and T. M. Robinson.

CINCINNATI CARRIAGE MAKERS' CLUB.

The regular meeting of the Cincinnati Carriage Makers' Club was held at the Grand Hotel, Thursday evening, January 21. Fifty-eight members and guests were present. After a delightful dinner, the meeting was duly called to order by President Otto Armleder.

The following were admitted to membership: J. S. Beatty, Hess Spring and Axle Co., Carthage, O.; Edw. Barron, Cincinnati manager of N. Z. Graves Co., paint and varnish manufacturers; Arthur E. Jones, president Cincinnati Mill and Mining Supply Co.; Chas. Bookwalter, secretary and manager the Bookwalter Wheel Co., Miamisburg, O.; G. W. Luekemeyer, Union Bow Co., Cleveland, O. The membership of Wm. A. Murray was transferred to W. G. Nolan. O. E. Walker, chairman of the Good Roads committee referred to the great progress that had been made in the United States within the last year, stating that no efforts were being spared to promote the great work of the improvement of the country's highways.

The following committee was appointed to nominate officers for the ensuing year, nominations to be made at the February meeting: H. M. Pollock, chairman; Jas. McCutcheon, H. J. Robben, Wm. Fisher and I. O. Bauer. The regular election is in March.

A. G. Brunsman was appointed to serve on the committee representing the Carriage Makers' Club in the Cincinnati Associated Organizations, succeeding A. H. Miller, whose term of office had expired.

On the entertainment program was John Manley, secretary of the Cincinnati Metal Trades Association, he being the principal speaker. His subject was "The Value of Organization, Both of Employer and Employe." He gave a number of examples on both sides, telling of the rapid growth in the past few years of organizations of all kinds. Mr. Manley is a forcible, entertaining speaker.

W. A. Sayers, who has recently returned from a trip abroad, exhibited some views which he had obtained while there which showed the good roads and in this connection he suggested that some movement be made by the Carriage Makers' Club, in cooperation with other organizations, to secure better roads in Ohio and particularly in Hamilton county.

The next meeting will be held at one of the local breweries on Feb. 11. It will be a valentine party in connection with a beeksteak supper and "potato fling."

BOSTON CARRIAGE MANUFACTURERS DINE.

The seventh annual dinner of the Carriage Manufacturers' Association of Boston and vicinity took place at the Revere house the evening of January 20th. The following officers were elected: Charles Waugh, president; R. E. Harrison, Jr., vice-president; W. P. Stone, treasurer; A. E. Taylor, secretary; W. R. Russ, A. A. Sargent, Charles Van Buskirk, M. W. Quinlan, Jr., P. Healy, A. L. Hatch and H. F. T. Thanisch, executive committee. About one hundred members were present and after dinner enjoyed a vaudeville entertainment.

Digitized by Google

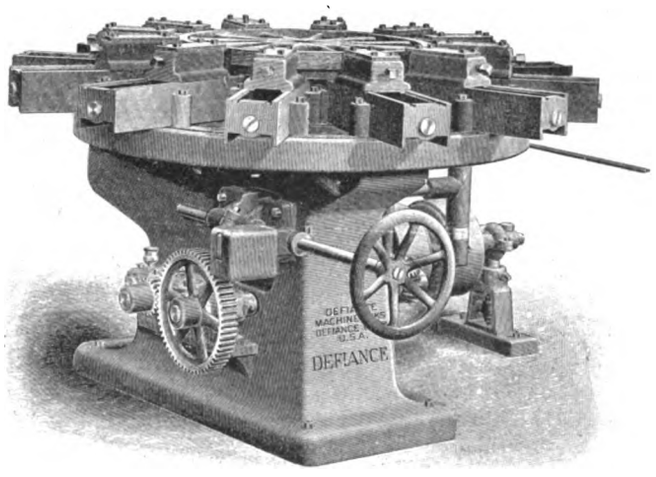
AUTOMOBILE WHEEL ASSEMBLING MACHINE.

The engraving shown herewith represents the new No. 198 Automobile Wheel Assembling Machine, built by the Defiance Machine Works, Defiance, Ohio, and used by the builders of automobile wheels for rapidly and accurately assembling or pressing firmly together the felloes and spokes and attaching the false hub and preparing the wheel for the wheel sizing machine.

This machine is built extremely stiff and powerful to withstand the heavy and accurate work expected of it. The frame is a massive casting in one piece with an exceedingly heavy geared and screwed chuck mounted upon it.

The stock from which motor car wheels are assembled by this machine should be accurately prepared. The spokes and rims finished complete are placed into the chuck, the jaws of which are simultaneously brought up to the work, which is pressed together tightly and held in that position until the false hub is properly attached, after which the jaws retreat from the work with a quick return motion.

The chuck is universal and fitted with a number of jaws, all of which are actuated simultaneously by cut gears, screws and a



double friction clutch. A convenient hand lever is provided for throwing the frictions from right to left to open or close the jaws, or to an intermediate position for arresting their movement, securing and holding any pressure required on the wheel while attaching the false hub, which consists of two flanges, one of which has a projecting hub with threaded end, the other tapped to suit it. The flange with the hub is placed into the machine before placing the spokes and rims in the chuck, and it rests upon the end of an upright spindle having a vertical adjustment by the hand wheel shown. After the wheel has been assembled the lower flange is brought up, with the hub extending through the wheel central with its felloe, after which the top flange is firmly screwed to it, clamping the flanges tightly against the sides of the spokes and holding them in this position until after the metal tire has been placed on the felloe. Then the false hub is removed and the permanent hub substituted in its stead.

All the working parts are accurately fitted, the principal bearings of bronze with self lubricating devices; all the sliding surfaces are scraped to a bearing and the gears are cut from the solid.

TO MAKE AUTOMOBILE BODIES.

J. Colyer & Co., coach and carriage builders of Newark, N. J., have recently completed extension alterations in anticipation of special work in the automobile line. This is one of Newark's oldest and most celebrated carriage institutions with an equipment capable of producing attractive creations in the line of limousine and landaulet automobile bodies.

OBITUARY

Henry Bert.

Henry Bert, prominent carriage and wagon manufacturer of Sacramento, Cal., who learned his trade under the Studebaker Brothers in the later fifties, died Feb. 17th. His wife, five sons and one daughter survive.

Erastus R. Roys.

Erastus R. Roys, a resident of Belleville, Mich., for 66 years, and a pioneer wagon maker, is dead after a year's illness. He was 76 years old and formerly lived in Detroit.

H. S. Clizbe.

H. S. Clizbe died suddenly at his residence, 6109 Greenwood avenue, Chicago, Ill. Mr. Clisbe was formerly a salesman with the Milburn Wagon Company and about fourteen years ago entered the service of the Studebaker concern. He has been associated with their Chicago branch since then and for the past year has been connected with the automobile department. Mr. Clizbe was looked upon as one of the brightest and best salesmen in the automobile and carriage business. He leaves a widow and two children.

James Hume.

James Hume, one of the best known carriage manufacturers in the country, died Jan. 15 at the McLean hospital at Waverley, Mass., where he had been for several weeks past.

The deceased was born in Scotland and came to this country at the age of 17, settling in Methuen, where he found employment. About 1854 he went to Amesbury, where he worked at spinning in the local mills, but soon gave up this to learn carriage painting. Later he started in business at Atherton,, after which he engaged in manufacturing at Malden, where he met with much success in building the old-fashioned velocipede in connection with carriages.

After five years in Malden, Mr. Hume returned and took up carriage building, making what is known as the Brewster buggy, and in a few years amassed a fortune.

In 1886 he disposed of his business and ceased to be an active manufacturer, though he became identified with a number of large concerns.

N. W. Vannier.

N. W. Vannier, who represented the Durant-Dort Carriage Company in the field of New York and New England for a long time, died with but a moment's warning in Boston, Massachusetts, on Saturday, January 2. He was buried in Whitehall, N. Y.

John Charles Moore.

John Charles Moore died at St. Louis, Missouri, on January 13. Mr. Moore had been associated with the Durant-Dort Carriage company for many years in capacities from salesman in a limited territory, in early days, to the responsible position of assistant sales manager and general salesman.

Joseph H. Long.

Joseph H. Long, president of the Long & Allstatter Company, Hamilton, O., died at his residence in that city January 3. Mr. Long was born in Hamilton, October 4, 1858, and was a son of Mr. and Mrs. John M. Long. His father was one of the founders of the business with which he was identified all his life. In 1871 Joseph H. Long became a traveling salesman for the business then conducted under the firm name of Long & Allstatter. He continued this work until 1877 when he entered the office of the firm. In 1891 the business was incorporated and he became vice-president, succeeding to the presidency on the death of his father in 1901.

Mr. Long was one of the most public spirited citizens of Hamilton. He was identified with several enterprises and was active in organizations for the promotion of the welfare of the community. He is survived by a widow, Amanda Galloway Long, two brothers and three sisters.

Digitized by Google

ECONOMIZING POWER.

A good deal is said and written regarding economical methods of production, most of which applies to labor cost, as is natural, seeing that it is the largest item which enters into the cost of the finished product as compared with the cost of the raw material. Notwithstanding the necessity of strict economy in all directions, I have seen little in print regarding power saving, if we except what some advocates of electric transmission have to tell us, the justice of their claims being somewhat problematical, although I believe it is the ideal method for most woodworking plants, putting aside the economical aspect of the question. In the present article, however, I propose to take up a few points which should appeal to all of us who are interested in reducing cost, and which, though perhaps small in themselves, may amount to a respectable sum yearly, if taken in the aggregate.

I suppose there are few plants, no matter how carefully planned, where some improvements could not be made, and it often happens, oddly enough, that most of us are particularly deficient in discerning our own shortcomings. (You may take this in any sense you like.) If you go into a strange factory you will see many things worth copying, and others which you could probably improve upon. It is the same way with the other fellow when he comes to visit you. It is an extremely hard matter for us to get out of the rut of our daily round, and some poorly planned arrangement may stare us in the face for years without recognition, simply because we have always been accustomed to seeing it as it is. When our attention is called to it we wonder why it had not been thought of before.

I can illustrate this point by citing a case where the elevators of a certain factory had been run for twenty years with heavy belts from line shaft to counters, and return belts from counters to machines, writes W. L. C. in Wood Worker. Some one suggested that, as the line shaft ran at suitable speed, it would be a good idea to dispense with the counters and belt directly from line to elevators. By making a simple change in the shifter device, the improvement was carried out, and a consequent saving of between 3 and 4 h.p. effected, besides rendering the lift more efficient. Here was a case where good mechanics passed by daily, and every one remarked the improvement—after it was done! Of course, it was a case of poor engineering at the start, but similar instances could very likely be found in many shops which are supposedly up to date.

No more shafting should be done than is absolutely necessary to transmit the power from the prime mover to the productive machine, and here is one of the great advantages of the direct-connected electric motor. Whenever the machine is not in use, even for short periods, the simple turn of a switch cuts off all current, and absolutely no power is required. Idler pulleys seem to be a favorite device with some, but they are large power consumers, and, withal, rather unsatisfactory. As far as my experience goes, the much-maligned loose pulley is far more desirable. Properly fitted up and regularly oiled, they will run for years without giving any more trouble than any other good bearing.

Then there is the matter of having a well-designed and economical steam plant, especially where steam is used for other purposes than running the engine. This is, perhaps, a little outside the scope of this article, but it is well to observe in passing that steam leaks are frequent and expensive. It is just these hidden expenses that are important, though not always looked after carefully, because a few tons of coal, more or less, are not very noticeable when they are but a small percentage of the total amount used.

With the well-made and practical ball-bearings now on the market, there is no question as to the economy of using them for any new equipment; and the expense of substituting them for babbitted boxes in many old installations could be paid for in a short time by the decreased consumption of fuel. An installation of forty-six bearings in our own plant resulted in a reduction of power used by three motors from 67 to 40 amperes, a saving of approximately 40 per cent. Figuring the amount of coal per horse-power hour as 3 lbs., gives us a net saving of seventy-five to eighty tons of coal per annum, which, at the price of coal in this section, would pay the full cost of the new bearings in less than three years. It is only fair to state, however, that some of the old bearings were not in the best of condition, and it was a question of rebabbitting or replacing. The cost of babbitting would have been about one-third the expense of the ball-bearings, and the reduction of power problematical, though probably small. We have had roller bearings in operation for some years, and consider them far ahead of the ordinary bearing, but the ball construction has passed the experimental stage, and is undoubtedly the bearing to install for economical operation. Of course, all depends on the material and workmanship, but there are two makes now on the market which are made upon honor, and will give good and satisfactory results when properly installed.

All operators of machinery should be educated to understand that their machines should be stopped when not in use, even for short periods of time. Many workmen do not realize the cost of power, and will leave saws or other small machines running for considerable periods if called away for any purpose. This is bad practice, though the absolute saving in one machine may be quite small. The old Scotch proverb, "Many a little makes a mickle," finds an application here, and the aggregate of small savings is worth considering for the good of the one who furnishes the wherewithal. "The company is rich and can stand it" is an expression too often heard. The proprietor or corporation who is not making money is a poor one to work for, and the workman who looks at it from the right point of view will practice the small economies for his employer, even though he may not think at the time that his efforts are appreciated.

In every plant there are doubtless conditions which might be changed in the direction of power economy, and it behooves one who has charge of the mechanical end to so study his own problem that he may eliminate all unnecessary waste. Now that the season for lighting is again with us, care should be taken that the number of lights is reduced to the minimum demanded by necessity. Other points will suggest themselves to every one who makes a careful study of his condition, and it may well happen that the sum total of small economies of this character would pay some good man a fair salary.

WEST TIRE SETTERS.

While the West machine was designed especially for setting tires on wheels and is accepted the world over as the only perfect machine for that purpose, still it is finding new fields for its use.

A prominent forging house has recently adopted this machine for compressing circles and fifth wheels to accurate sizes and circles. Another instance is of several concerns in the oil fields that have adopted the West machine for compressing pipe couplings. So accurate is the operation of the West Tire Setter that it is also being used for compressing automobile tire channels where a variation of one-hundredth part of an inch in diameter is allowed. A recent order was received for a No. 5 Hydraulic Tire Setter to be shipped to the Phillipines. This machine sets tires up to 6 inches wide by 1¼ inches thick on wheels 5 feet 6 inches in diameter. Whether it is a wheel tire or any other article the West Tire Setter will compress any thing to both size and perfect circle. If interested in tire setters, remember that the West is the peer of all.

So great is the rush of orders at the plants of the Henney Buggy Co. and the Freeport Carriage Co., Moline, Ill.—both controlled by the Moline Plow Co.—that orders have been issued to operate both plants day and night in two shifts of twelve hours each. Both plants will also operate Sundays.

Digitized by Google

THE PRINCIPLES OF DRAUGHT.

An explanation of the principles of draught, as shown herewith, in which the action of drawing is described as being much like that of a machine on which corn or other material is weighed. Figure 1 is very easily explained. A is the point at which the weight of the body is supposed to be accumulated—the center of gravity. CA is the direction in which the power

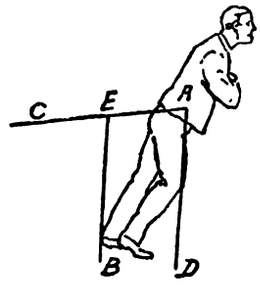


Fig. 1

is to be exerted. Assuming that the legs of the man are strong enough for the purpose, his entire body, by its own gravity, tends in its fall to describe a circle around the point B. The resistance of the load attached to the rope, AC, prevents the man from falling, or rather the man in falling supplies the energy which moves the weight or draws the load. As will be seen, the man is ill-adapted for drawing great weights. In Fig. 2 it will be seen how much better the horizontal backbone is for drawing than the perpendicular one. The mechanical situation is not altered in any way by the support given by the horse's forelegs. Should the load be heavy enough, and a good horse uses all the energies at his command, his fore feet will be lifted with his weight. The value of horses for draught purposes does not necessarily vary with his weight. Staying power, ability to quickly and economically convert food into muscular enery, age, etc., are other factors, but, given equality elsewhere, the heavier of two draught horses is the stronger.

The weight of a horse can be taken as concentrated in his center of gravity, and the distance from his hind feet to his center of gravity the length of leverage on which his weight operates.

In Fig. 3, A can be taken as the point where the horse's hind heels rest, B his center of gravity, AB is the length of one arm of the lever. The effective length, however, is not AB, but the distance from A to where a vertical line dropped from the center of gravity of the horse meets the horizontal line—namely, A.C. The length of the other arm of the lever is the distance CB between the horizontal line and the line of pull which is represented by the dotted line DB. This explains how a horse

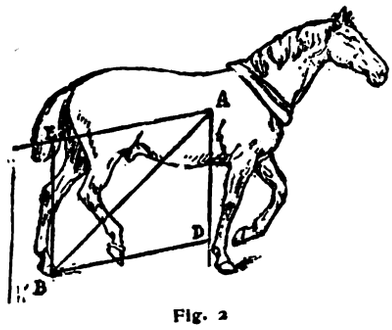


Fig. 2

can exert a pull greater than his dead weight. His weight is, as it were, on the long arm of a lever. If AC is half as long again as CB then the horse can exert a pull equal to one and a-half times his own weight.

A great deal has been said from time to time about the best height for wheels and on the effect of wheels on draught. Axle friction varies inversely as the height of the wheel or directly as the diameter of the axle. With rolling friction it is different. No satisfactory law in regard to rolling friction has yet been formulated. It is conceded that the higher the wheel the easier the draught, but how draught varies with the height of the wheel we have never seen satisfactorily stated. There is a point when draught. We do not think, however, that that is the reason increased weight of high wheels neutralizes diminution of which has guided practice hitherto, says the Farmer and Stockman. In our opinion the heights for wheels in practice have been determined by the average height of horses. To transmit motion from one body to another the right thing to do is to connect the centers of gravity of the two bodies. In the case of a locomotive, if the coupling is below the center of gravity of the engine, the tendency is for the locomotive to lift at the back, and if the coupling is too high the engine rears in front.

For the purposes of draught a horse is simply a body in motion off the ground, and all present an exact parallel to the pulling man.

The illustration shows very clearly how it is that a horse pulls tion. If the trace is attached too high it lifts him off his feet. If too low he is in danger of falling on his knees; and likewise with the vehicle, if the point of draught is too high, the load is pulled on the horse's back, but if too low the wheels are pulled from under the load, which is thrown up. This in prac-

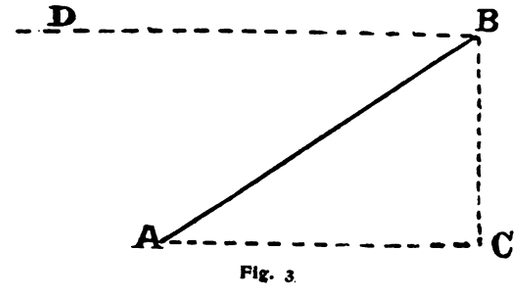


Fig. 3

tice is met by putting the weight forward. It removes the symptom of the trouble, but makes a badly-balanced vehicle, which uses up part of the energy of the horse when he is pulling to keep some weight on his back and remaining light on when the horse is in the breeching.

With two vehicles of average height the trace connects the center of gravity of the horse with the center of gravity, or rather center of resistance, of the vehicle whenever the height of the wheel suits the height of the horse.

AUTOMOBILE DECORATIONS.

Many of the wise builders realize the value of transfer decorations in body finishing and are taking more than a passing interest in this process of car embellishment. In ceiling effects for limousine bodies transfers make perfect work possible and add materially to the general appearance of the interior. To get away from the plain or unattractive outer view of cars generally plaid effects which would be so expensive in hand decoration are made possible with transfer designs. Lower panels of all bodies would certainly look richer and be more pleasing to the prospective buyer if finished with a plaid or cane transfer.

Nothing cheap about this process but the price. There is absolutely no more serviceable or lasting process of decoration than that of transfer ornaments. Look into the many valuable schemes of decoration that are manufactured by Palm, Fechteler & Co., of 675 Fifth avenue, New York, now. Get next to this process and be one of the first in the field.

This company would be pleased to supply you with suggestions and all information regarding the process and product.

On another page is advertisement telling story of the full line.

When in need of anything in the vehicle or accessory lines, turn to our advertising pages.

Digitized by Google

SPECIAL TRADE NEWS FROM MICHIGAN

Newsy Notes by our Correspondent Concerning Well Known Carriage and Automobile Manufacturers in the Wolverine State.

Vehicle manufacturing in Flint bids fair to establish new records for the year just begun. Such a prophecy is the only logical conclusion to be reached after hearing what the carriage manufacturers of that city have to say concerning the outlook for business at the present time.

William R. Hubbard, preseident of the W. A. Paterson Carriage Co., takes the most optimistic view of the business outlook for 1909. "There is not the slightest question that there has been a decided improvement all along the line," he said. "There is a different feeling from that which existed some weeks ago, and I think the same may be said not only of Flint and the State of Michigan, but of the entire country. We have lots of business in sight. We are running from 75 to 100 more men than we were a year ago at this time, and within a few weeks we shall have on as many more. We have enough business now to run the factory 90 days if we did not receive another order."

Fred A. Aldrich, secretary of the Durant-Dort Carriage Co., said in reply to a question as to trade conditions and the outlook for business: "Things are looking mighty good here. We are getting in a very large number of orders, to be moved immediately. Everything seems to be on the upgrade with us."

Fred Weiss, of the Flint Axle Works, said that business conditions at the present time present a wholly different aspect than they did a year ago. "The outlook now is 100 per cent better than it was then." He added: "We have done more business during the past four weeks than we did the six months preceding. Customers want all their orders filled now; they say they cannot wait. We are getting lots of orders and what we are figuring on is getting the goods out and getting them out on time. Our business in December, 1908, was 25 per cent. better than in December 1907."

"The outlook for business with us is very good," stated C. H. Cumings general manager of the Flint Wagon Works. "Prospects are fine for an immense business during the coming year. Business is coming on with a rush—there is no doubt about that. We are employing 50 per cent. more men than we were a year ago."

One of the new concerns in Flint that is looking forward to a good year's business is the Flint Body Co., occupying the old West Kearsley street plant of the W. F. Stewart Co. The officers of the Flint Body Co. are W. F. Stewart and his son, W. E. Stewart. In operation only seven weeks the new concern, which manufactures only panel bodies as yet, has 100 men at work and indications are that this number will be more than doubled before many weeks. The company has a half-million feet of lumber in its yards at the present time.

S. S. Stewart, of the W. F. Stewart Co., said that his plant is running not only full force, but on overtime. "We have more orders than we can take care of," he added, "and the prospects for a year's big business are very reassuring."

With heavy increases assured within the next few weeks, it is conservatively estimated that Pontiac vehicle companies' pay rolls will reach the highest point in the history of that city.

Additions to Pontiac carriage plants which are now nearly completed guarantee the employment of many more men than are now employed within the very near future. Among the plants which have planned to increase are the Rapid, Monroe Body Co., Oakland and Auto Top and Trimming Co. There is also the Carter Car Co., which now employs 75 men and will increase its force as fast as machinery is installed and in readiness for operation.

That it is of pecuniary advantage to vehicle dealers to try to obtain the trade of some particular sect or clan of people in the general hunt for new trade is exemplified in the case of Charles E. Belknap, of the Belknap Wagon works, of Grand Rapids, who has, since the year 1884, held the Mormon sleigh trade.

"The Mormon trade," said Mr. Belknap, "is an important item with us. In business matters I have found this sect mighty nice people to deal with. They used to buy in Wisconsin, but some trouble arose and a delegation of Mormons came here. I filled an order for them and have had their business ever since. They are particular as to quality of work, but they pay well and promptly and in our relations we have never had a dispute.

"We are just beginning our wagon trade, as the sleigh season is nearly over," continued Mr. Belknap. "The automobile has been making great inroads on the wagon and carriage trade; I have found heavy trucking in cities is more and more being done with power vehicles, and special delivery autos for retail stores are coming into use. When it comes to carriages, as between spending $1,500 or more for carriage, horses and harness, and the same amount or a little more for an automobile, the tendency is becoming more general to take the auto.

"We have sent two carloads of sleighs to Alaska this year, the freight on the shipment being about $2,000 a car. With such freight charges to pay, the sleighs must be of the very best quality. There would be no money in cheap sleighs under such conditions."

The Timken Roller Bearing Axle Co., of Canton, O., has closed a deal for the plant of the Detroit Sanitary Supply Co., on Fort Street, Detroit, and will open a factory there by July 1 next, employing 500 men at the start. A communication to the Board of Commerce from W. H. Timken, president of the company, thanks the board for its assistance in helping the concern secure a location. The price paid for the Standard Sanitary Manufacturing Co.'s plant, according to the deed filed, was $100,000 and is for the buildings and two and one-half acres. The Timken Co. is capitalized at $500,000. Its plant in Canton will be maintained, but it is the intention ultimately to make the Detroit industry larger than the parent concern. The purpose is to bring a plant convenient to the Detroit automobile manufacturing field, not a few Detroit auto manufacturing concerns using the Timken axle.

Three officers of the Timken Roller Bearing Axle company will leave Canton some time this summer or early next fall to take charge of the Detroit plant. They are A. R. Demory, general superintendent; W. Lewis, assistant secretary and sales manager, and H. W. Alden, mechanical engineer.

The Foote Axle Burr Co., of Marshall, is meeting with gratifying success for so new a concern. An order recently was received from Sayers & Scovill, of Cincinnati, for a large shipment of the roller bearing burr made by the Foote company. This Cincinnati concern claims to be one of the largest vehicle manufacturing concerns of its kind in the world, its annual output being about 50,000 vehicles and the Foote company will supply all the burrs used by it.

Digitized by Google

The Jackson Carriage Co. is building a factory for the manufacture of automobiles and within 60 days will begin making machines. It will confine the output of this factory to touring cars and runabouts of the three and four-cylinder types, but will continue its regular carriage business at the other plant.

The Fuller Buggy Co., of Jackson, a large manufacturer of carriages, is about to place an automobile buggy on the market.

The Deeds & Hirsig Manufacturing Co., of Nashville, Tenn., which recently purchased the plant of the Harrison Wagon Co., in Grand Rapids, with the intention of operating it as a buggy factory, since the deal was made has bought a large buggy factory in St. Louis, Mo. It is now in full operation and the company has decided not to make buggies at the Harrison plant, but will place it on sale. The heavy wagon machinery of the Grand Rapids plant has already been shipped to Arkansas, by Deeds & Hirsig, to be near a larger demand for the class of vehicles turned out therewith.

The Phoenix Paint & Color Co. property of Bay City has been sold by George A. Marston, trustee, to the Jennison Hardware Co. for $1,260. "We do not know as yet what will be done with the plant," said W. F. Jennison. "There are parties figuring on taking the entire property and that is what we would like to have done. If the deal does not go through then we shall dismantle the plant and realize what we can from it."

J. F. Cooper, who has been business manager of the Hillsdale Truck & Wagon Co., of Hillsdale, at a recent meeting of the board of directors was made sales manager. F. O. Arnold, who has been with the company for several months, was made general manager, being promoted from office manager.

The Ferguson Motor Co., of Lansing, capitalized at $25,000, has filed articles of incorporation with the secretary of state. The stockholders are given as: Claude G. Ferguson, Frank G. Clark and Albert B. Hayes, all of Lansing. Mr. Ferguson is the principal stockholder. The articles say that the concern is organized to manufacture automobiles and gas engines.

The McIntosh & Ranney Co. has incorporated to deal in automobiles. It is capitalized at $10,000.

F. A. Messler has purchased the Dolson Automobile Co., of Charlotte, and will manufacture auto delivery wagons and beam trucks. Operations will begin immediately.

The Buick Motor Co. is now installed in its handsome new quarters at 127 Woodward Avenue, Detroit. The main plant in Flint recently made a record in wage-paying, by distributing $105,000 in one day for a two-week period of work. This is said to be the largest semi-monthly payment ever made by a Michigan vehicle concern.

One of the largest shipments of automobiles ever made in show in New York was the record of the Buick sales, according to H. E. Shiland, general sales manager, at Flint.

One of the largest shipments of automobiles ever made in the state left Lansing via the Lake Shore & Michigan Southern for Wichita, Kas., consigned to the Reo agents in that city—the Wichita Auto Co.

Said R. E. Olds, president of the Reo Motor Car Co.: "With 6,000 orders for 1909 Reos already in hand and allowing a margin of 30 to 40 per cent. in excess of this quantity for the usual overrun of actual deliveries above the minimum quantity of cars which dealers contract for, it looks as if our entire factory will continue to run overtime until the close of the season."

A compilation of the board of commerce of Detroit, giving yearly statements of the exports from this city, for the year just ended, shows that for 1908 there were $737,466 worth of cars, carriages and other vehicles exported, of which sum $339,000 was in automobiles and their parts.

The Sintz-Wallin Co., of Grand Rapids, has been shipping motors for engines to Finland, Constantinople and Kief.

H. W. Garberson, of Chicago and Attorney J. W. Thompson, of Marion, O., have been in Flint, looking over the possibilities with regard to a site for a new auto concern which is planning to reorganize with $2,000,000 capital.

A. H. Goss, secretary of the Buick Motor Co., of Flint, has announced that work has been begun upon a factory building for the Champion Ignition Co., at Harriet street and Industrial avenue. The building will be uniform in appearance with those of the Buick concern and the Weston-Mott Co. The concern is affiliated with the Buick company and will manufacture all kinds of electrical equipment, especially electrical ignition devices. A large number of men will be employed.

The Detroit companies that showed at the recent New York auto exhibit sold cars as follows: Everett-Metzger-Flanders Co., 250 cars, $312,000; Cadillac, 60 cars, $85,000; Chalmers-Detroit, 100 cars, $215,000. The E. M. F. Co. stood first in the entire list in the number of cars sold.

Not only have the Olds and Buick Automobile companies entered the General Motors Co., of New Jersey, a $12,000,000 corporation said to be backed by J. P. Morgan, but it is announced that they will break from the Association of Licensed Automobile Manufacturers.

An experienced writer on auto topics in the City of the Straits has estimated that the automobile output of Detroit for 1909 will reach 50,000 machines.

Following is a brief summary of the projected plans for enlargement of principal factories: Ford Motor Car Co., contracted for materials for 17,500 cars and may make 25,000; Packard works will increase from 1,300 cars to 2,300; Cadillac will turn out 10,000 new models as against 3,500 last year; Chalmers-Detroit looks for increase in output of from 506 last year to 3,500 cars; Everett-Metzger-Flanders Co., will market 12,000 cars; Brush runabouts will increase from 700 to 3,000; there will be 2,000 Regal-Detroits as against 1,500 Blomstrom cars, while the Anderson Carriage Co. will make 500 Detroit electrics instead of 200 as in 1908. Other concerns are making plans for heavy increases in their output.

The directors of the Michigan Wagon & Manufacturing company of St. Johns, are investigating the accounts of Arthur C. Cameron, president and manager, and Emil J. Mueller, head bookkeeper. While the books are in a badly muddled condition, it is stated that no shortage has been discovered.

THE CHAUFFEUR.

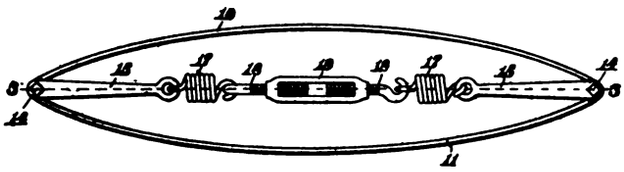
An effort has been made to form a national association of chauffeurs, and the meeting for that purpose is to be held in Chicago, February 12. Just what special purpose is to be subserved by such an organization is not at present apparent, unless it is fathered by automobile manufacturing interests. Chauffeurs are not generally in the habit of traveling long distances by rail to attend meetings, and their employers will probably need their machines and the service of their chauffeurs. Still, as this is the age of organization and association, and as the chauffeurs represent several thousand men, it will be interesting to note what they gather for and what they want to do.

Digitized by Google

RECENTLY GRANTED PATENTS OF INTEREST IN THE CARRIAGE TRADE.

No. 905,981. Vehicle Spring, December 8, 1908.

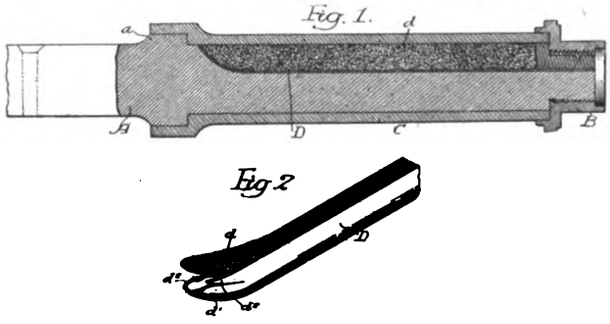
In this device, the tension of the coiled springs 17 is such as to normally retain the pivots 14 at such distance from each other as to keep the flat springs 10 and 11 bowed, as shown. It is evident, however, that under abnormal conditions when a sudden strain is brought upon the flat springs 10 and 11, thus causing them to straighten and separate the pivot pins 14, the coiled springs 17 will yield and allow such separation, returning



the pivots to their normal position as soon as the abnormal strain has ceased. The ends of the members 18 are provided with right and left-hand threads which are threaded to the turnbuckle 19 so that when the turnbuckle 19 is moved in either direction the distance between the two pivot pins 14 may be increased or decreased as desired, thus regulating the tension of the springs 17. The inventor is Wesley W. Blair, of Newtonville, Mass.

No. 906,675. Axle Lubricator. December 15, 1908.

Hitherto some difficulty has been experienced due to the drawing away of the wick d from the inner end d' of the tube or reservoir D, when this latter was pushed into place in the axle groove prior to the screwing on of the nut B. Under these conditions the extreme inner portions of the box and axle did not receive a sufficient amount of lubricant, and as a result, heat-

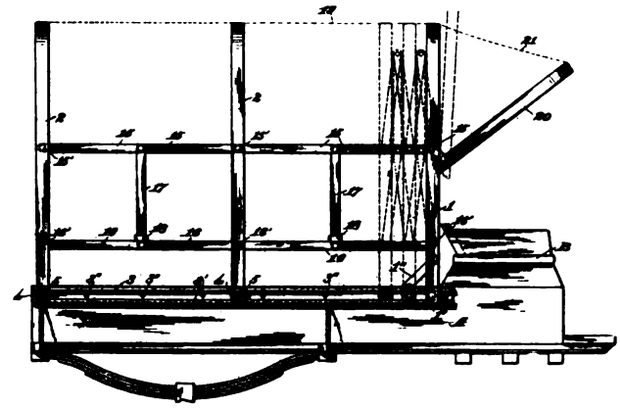


ing and cutting of said parts, frequently occurred. In order to prevent such drawing away of the wick from its containing tube, as well as to positively hold said wick up to the extreme inner end of said tube, the inventor of the device illustrated makes inclined cuts in either or both sides of the reservoir, and bend inwardly the sharp tongue d2 formed thereby. Said tongues are pressed into the body of the wick d immediately adjacent to its inner end and act as barbs to prevent its drawing away from said end. As a consequence, while it is relatively easy to introduce the wick into the tube, it con not be moved outwardly in said trough after its inner end has been properly engaged by either or both of the tongues d2. Therefore, when the reservoir is introduced into the slot in the axle, the wick d cannot draw away from the inner end thereof even though it should rub with considerable friction upon the interior surface of the box C while being put in place. Under the operating conditions there is therefore a constant supply of oil to the inner portions of the box and axle, thereby obviating the tendency of these parts to heat or cut. The inventor is Edwin H. Barker. of Philadelphia, Pa.

No. 905,571. Folding Wagon Top, December 1, 1908.

On many wagons such as light and heavy delivery wagons, tops are objectionable at most times, for the reason that they interfere with the easy loading of the wagons, but at other times they are needed to protect the loads. In many cases it is the custom to employ removable tops which are placed on the wagons when the weather is inclement or threatening, but this is objectionable, because the tops are not always in place when needed.

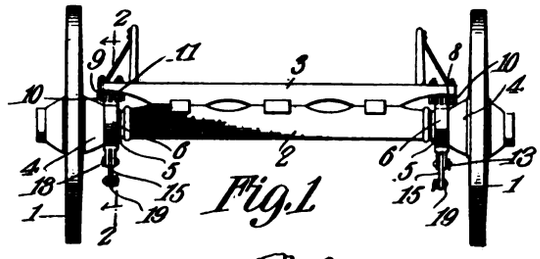
The object of this invention is to provide an improved top for wagons of various kinds, which tops shall be constructed in such manner as to be capable of covering parts or all of the

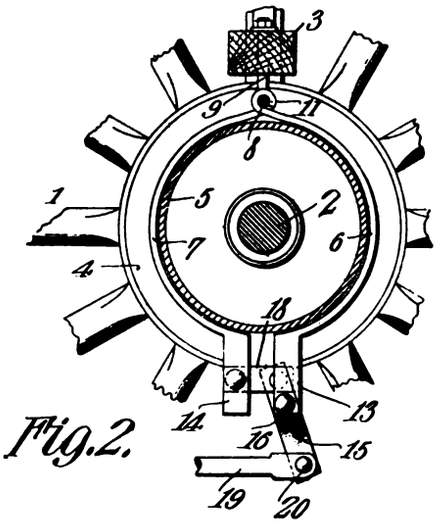


wagon body when there is need of the same, but which unlike other wagon tops, shall be collapsible and hence adapted to be kept upon the wagon in collapsed or folded condition, when not required to protect the contents of the wagon. The top can be pushed forward so as to only cover the drivers' seat when desired. The inventor is Leo David Pangborn, of Menominee, Mich.

No. 907,189. Vehicle Brake, December 29, 1908.

This invention has for its object to provide a brake of the clutch type to be applied to the hubs of vehicle wheels and be operated by a rod or rods leading to the front or other con-





venient part of the vehicle, which rod or rods, on being moved, causes a pair of semi-circular bands to clamp a friction band fixed on each hub and thus retard the rotation of the wheels.

On the inside end of one or both hubs 4 of the rear wheels is shrunken a circular metal band 5 which the clutch members

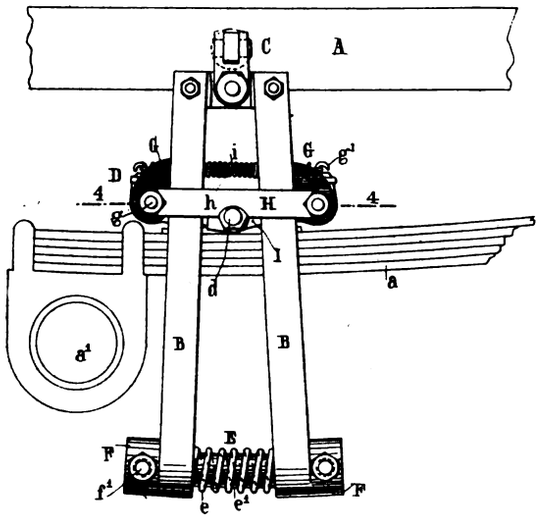
Digitized by Google

6 and 7 of the brake are adapted to clamp when the device is operated. Each clutch member 6 and 7 is made of a semicircular band, as wide as necessary, the two bands of each brake being hinged together above the hub 4 on a horizontal pin 8 parallel with the axle and supported by means of two eye bolts 9 depending from an end of the bolster 3 and engaging the end of the pin 8 fastened in said eyebolts by nuts 10. A bolt and nut may be used instead of a pin and two nuts, as is obvious. Between the hinge joint 11 of the brake members 6 and 7 and the eye bolts 9 are two coil springs 12, one on each side of the hinge joint, the use of which enables the brake members to follow the side motion of the wheels when traveling over uneven ground.

Normally, the brake or clutch members 6 and 7 are held out of contact with the friction band 5 by the rod 19, but when the brake is to be applied, this rod is operated to turn the lever 13 on its fulcrum and draws the fingers 13 and 14 closer together, swinging the brake members on their hinge pin and clamping the outer surface of the friction band. The inventor is Walter P. Sims, of Nezperce, Idaho.

No. 906,241. Shock Absorber for Vehicles, December 8, 1908.

Shock-absorbers ordinarily possess certain inconveniences, among which may be cited in particular (leaving aside shock-absorbers containing liquid or compressed air and therefore subject to leakage); the hard riding of the carriage; the shearing of the suspension springs; the frustration of their useful effect or sensitiveness; the necessity for continually adjusting the suspension by reason of the wear of the frictional parts; the impossibility of applying them to heavy vehicles; further, none of them is adjustable for the variable strength of springs which



may consist of from five to twelve plates. The system of shock-absorber which is the object of this invention is intended to avoid these inconveniences; it allows of all displacements and works in the same manner in all positions, even completely turned over; it is adapted to all kinds of vehicles and can be regulated for all suspension springs whatever be their strength. The shock-absorber is rendered fast to the chassis A by the pin or axle c of the universal joint and to the suspension spring a by the axle or pin d of the runner D. The separator E comprises a spring e threaded on a sleeve e1 in which can slide, within certain limits, by the aid of a pin and a groove (not represented), a rod e2. The longitudinal members B have at each of their lower extremities, a socket F forming a protection exteriorly, and furnished interiorly with two tubular nipples f fast to the said sockets and traversed by bolts f1 which also pass through openings for the purpose in the rod e2 and the sleeve e1; the extremities of the spring e bear upon the nipples f and the said spring tends constantly to increase the angle of the members B upon which bear the fiber wearing pieces G. According to the space available, the shock-absorber can be placed to the right or the left of the axle or in any other suitable position provided it can be connected on the one hand to the chassis by a universal joint allowing all displacements to be followed in every direction of the body of the carriage relatively to the suspension spring and connected on the other hand, to this latter by the moving part or runner forming a brake. From the foregoing it results that the cushioning of the shock is in proportion to the violence of this latter. The inventor is Edmond Elie Lantz, of Paris, France.

No. 907,191. Vehicle Tire, December 22, 1908.

This invention is a tire embodying a yielding portion consisting of a coil spring which is fitted to the rim of the wheel, the purpose being to provide the tread portion of said coil spring with an armor or protector to sustain and distribute the stress and to prevent mud, stones and other foreign matter from entering the spaces formed between the volutes of the spring coil to the detriment of the tire as well as increase the weight by accumulation.

The protector or guard is constructed of sheet metat and is composed of sections which are pivoted or hinged. The manner of connecting the sections 5 is immaterial so long as the joint

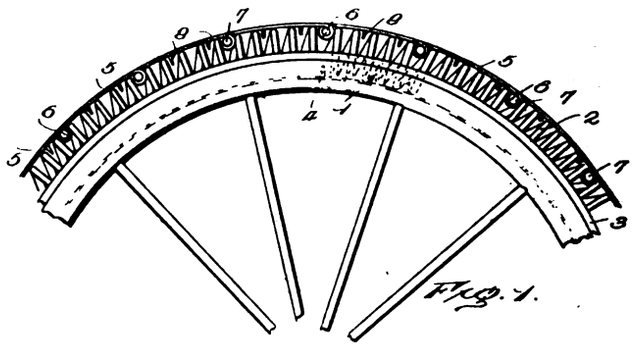


Fig. 1.

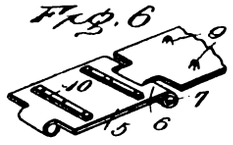


Fig. 6

is sufficiently closed to prevent the passage of mud or foreign material. The hinge joint 6 projects inward and is adapted to come between adjacent coils, thereby assisting materially in preventing movement of the protector upon the tire as well as leaving the outside of the protector smooth which is desirable in certain instances. The end of the adjacent sections are extended and formed into eyes which are adapted to receive a connecting pin 7. The pins together with the eyes form inner projections which come between adjacent coils and prevent movement of the protector upon the tire. It is also contemplated to provide pins 8 which are fitted to the inner side of the protector to project inward and engage with coils of the tire. The pins 8 constitute projections, or stops, and may be of any construction and secured to the protector in any manner. The inventor is Jacob D. Sower, of Elmo, Kansas.

RECENTLY GRANTED PATENTS OF INTEREST TO THE CARRIAGE AND MOTOR TRADES.

904,921—Hub, Spindle and Axle Arm. W. E. Baxter, Frankfort, Ky.
901,672—Axle. B. W. Berry, assignor of one-half to J. H. Perkins, Monticello, Fla.
904,837—Cushioning Device for Vehicles. A. Carpenter and C. C. Kissell, Findlay, Ohio.
904,687—Motor Vehicle. W. Y. Donahoe, Cascade, Iowa.
904,868—Transmission Gear for Motor Vehicles. H. T. Hansen, Chicago, Ill.
904,876—Vehicle Wheel. M. Joachimi, Sr., Versailles, Mo.
904,703—Vehicle. J. K. Kendrick, Germantown, Cal.
904,793—Dumping Wagon. A. Maxwell, Piqua, Ohio.
904,721—Motor Wheel for Cycles. J. E. Perillard, Geneva, Switzerland.
904,993—Tire Tightener. P. Rau and M. J. Rau, Garden Plain, Kan.
904,723—Automobile Transmission Mechanism. M. O. Reeves, assignor to Reeves Pulley Company, Columbus, Ind.

Digitized by Google

905,001—Canopy for Automobiles. E. T. Robinson, assignor to St. Louis Car Company, St. Louis, Mo.
904,654—Mud Guard. W. D. Snowman, Ashland, Maine.
904,570—Supplemental Brake for Motor Cars. M. D. Stocking, Lindenwood, Ill.
905,113—Thill Iron. F. A. Strodel, assignor to C. C. Bradley, Sr., Syracuse, N. Y.
904,818—Wagon End Gate. R. L. Templeton, Ruby, Va.
904,575—Anti-Friction Thrust Bearing for Wheels. W. J. Trevessick, Glen Campbell, Pa.
904,822—Vehicle Gear. J. D. Weekes, Northumberland, Pa.
905,133—Draft Equalizer. S. E. Bailor, Tarkio, Mo.
905,637—Speed Changing Mechanism. B. Beskow, San Francisco, California.
905,405—Traction Wheel and Runner for Vehicles. W. N. Britton, Rochester, N. Y.
905,658—Tongue Support. C. Coppock, Fort Thomas, Ariz. Ter.
905,410—Turning Axle Spindle. S. A. Davis, Martel, Fla.
905,154—Automatic Vehicle Box and Frame Lift. H. C. De Weese, Portland, Ore.
905,671—Rubber Tire Setting Device. W. W. Edmisten, Pendleton, Oregon.
905,673—Hub for Vehicle Wheels. C. L. Elliott, McKeesport, Pa.
905,697—Motor Control System for Electric Vehicles. M. R. Hanna, Schenectady, N. Y., assignor to General Electric Co.
905,699—Axle. J. C. Heinzelman, Leeds, N. D.
905,536—Thill Coupling. J. B. Jackson, Meridian, Miss.
905,704—Sled Runner. J. E. Johnson, North Anderson, Ind.
905,438—Shock Absorber. W. P. Kidder, Jamaica Plain, Mass.
905,730—Cushion Tire for Vehicle Wheels. G. O. Maulsby, Birmingham, Ala.
905,204—Tire Fastener. J. D. Maxwell, Tarrytown, N. Y.
905,736—Wagon Coupling. J. F. Morris, Bakersfield, Cal.
905,571—Folding Wagon Top. L. D. Pangborn, assignor to M. B. Lloyd, Menominee, Mich.
905,360—Draft Gear. W. M. Pond, Greenview, Ill.
905,455—Storm Apron Device. J. H. Powers, Elkhorn, Wis.
905,584—Pneumatic Tire. F. Richardson, Providence, R. I.
905,462—Motor Vehicle. E. Rosenberger, Mankato, Minn.
905,239—Elastic or Pneumatic Tire for Road Vehicles. H. J. Scott, Clerkenwell, London, England.
905,244—Driving Mechanism for Automobiles. R. F. Stewart, Pocantico Hills, N. Y.
905,251—Motor Propelled Sleigh. M. Trunt, Monticello, Minn.
905,769—Speed Indicator. A. Turner, Leicester, England.
905,607—Controlling Device for Motor Vehicles. W. C. Van Buren, Chicago, Ill.
905,257—Pneumatic Tire. L. J. Westness, Milwaukee, Wis.
905,396—Vehicle Brake. L. Whiteside, Lattimore, N. C.
905,832—Vehicle Wheel. J. B. Barnes, Fort Wayne, Ind.
905,833—Wheel. J. D. Behrens, Cincinnati, Ohio.
905,980—Friction Drive for Motor Vehicles. V. Bendix, assignor to Bendix Company, Chicago, Ill.
905,981—Vehicle Spring. W. W. Blair, Newtonville, Mass.
906,487—Pneumatic Tire for Wheels. C. S. and J. A. Challinger, Manchester, England.
905,990—Three-Horse Equalizer. G. A. Crum, Los Angeles, Cal.
906,123—Power Driven Vehicle. C. Elkin, New York, N. Y.
906,001—Singletree Hook. B. F. Emery, Thayer, Iowa.
905,866—Wheel for Vehicles. T. J. Furphy, Jr., Philadelphia, Pa.
905,871—Adjustable Steering Wheel. P. P. G. Hall, Philadelphia, Pa.
906,014—Draft Equalizer. R. P. Harriman, Central Point, Oregon.
906,019—End Gate. J. B. Hennemann, Bloomer, Wis.
905,884—Vehicle Wheel. W. Q. Kennedy, New York, N. Y.
906,437—Tire Protector. H. M. Leese, Washington, D. C.
905,896—Combined Wagon Brake and Lock. C. T. Lyon and W. F. Skaggs, assignors of one-third to I. R. Bowling, Redbush, Ky.
906,442—Vehicle Seat. W. Meredith, Manchester, Tenn.
906,284—Vehicle. W. G. Polsgrove, Roswell, N. Mex. Ter.
906,158—Valve for Pneumatic Tires. H. W. Raymond, assignor to B. F. Goodrich Company, Akron, Ohio.
908,062—Whip Socket Lock. H. R. Arnold, Pomeroy, Ohio.
907,715—Driving Wheel for Electrically Propelled Vehicles. D. Balachowsky, Paris, and P. Caire, Levallois-Paris, France.
907,744—Singletree. W. L. Collins, Cairo, W. Va.
907,750—Wheel. A. B. Day, Knoxville, Tenn.
907,774—Buggy Box Seat Brace. P. E. Gatchell, Buckley, Wash.
908,275—Tire. E. Kempshall, London, England.
908,282—Chafing Iron. V. Labadie, Dallas, Texas.
907,847—Motor Driven Vehicle. H. B. Molesworth and C. E. Masterman, London, England.
908,417—Dumping Wagon. H. W. Neal, assignor of one-half to E. E. Davis, Indianapolis, Ind.
908,026—Vehicle Wheel. T. Newman and I. M. Davidson, Los Angeles, Cal., said Davidson assignor to said Newman.
908,334—Fifth Wheel Clip Attachment. W. A. Schleicher, Cleveland, Ohio.
908,339—End Gate for Wagons. H. M. Sheldon, assignor of one-half to F. Peterson, Webster City, Iowa.
907,906—Vehicle Wheel. H. M. Specht, Skaneateles, N. Y.
907,907—Steadying Device for Vehicles. E. A. Sperry, Brooklyn, N. Y.
907,909—End Gate Fastener. C. W. Stark, Mountain Lake, Minn.
907,913—Machine for Rounding Felloes. J. G. Stoen, Montevideo, Minn.
908,722—Differential Drive Gearing. N. M. Anderson, Bedford, Ind., assignor to Buggycar Company, Cincinnati, Ohio.
908,442—Vehicle Wheel. G. A. Budge, Oakland, assignor of one-half to J. T. Ryan, Vallejo, Cal.
909,067—Whiffletree Hook. A. F. Crosby, Towners, N. Y.
908,660—Salvage Wagon. J. O. Glanville, assignor of one-half to W. C. Capen, St. Louis, Mo.
908,561—Safety Fender or Guard for Automobiles and other Vehicles, F. J. Graf, New York, N. Y.
909,086—Running Gear for Vehicles. J. H. Hand, assignor of one-fourth to F. I. Cornwell, Ann Arbor, Mich.
908,666—Singletree Guard. T. L. Harris, assignor of one-half to A. I. Haines, Wrightsville, Ga.
908,672—Wagon Tongue Attachment. G. Hofmaister, Union Center, Wis.
908,572—Vehicle Axle. T. D. Jones, Cleveland, Ohio.
908,869—Dumping Wagons. J. W. King, New York, N. Y.
909,001—Divided Wheel Rim Serving as Tire Retainer. R. Kronenberg, Ohligs, Germany.
909,099—Variable Speed Gearing. S. T. Lewis, Milwaukee, Wis., assignor of two-thirds to R. P. Davenport and E. C. Rockwell, Chicago, Ill.
908,475—Wheel Tire. T. Midgley, Hartford, Conn., and E. Hopkinson, East Orange, N. J.
908,488—Pneumatic Tire. J. L. Newell, South Bend, Ind.
909,109—Locking Whip Socket. J. Olsafskie, Pana, Ill.
908,491—Wagon Rack or Box Lifting Device. G. A. Peters, Hutchinson, Minn.
909,034—Vehicle Wheel. C. Stanley, San Francisco, assignor to Economic Safety Automobile Wheel Company, Alameda, Co., Cal.
908,514—Starting Device for Wagons. W. H. Stewart, St. Louis, Mo.
908,914—Adjustable Holdback. J. W. Ward, Larue, Ohio.
909,514—Vehicle Wrench. C. J. Atkins, Cando, N. D.
909,845—Vehicle Body Holder. W. C. Burris, assignor of one-half to M. E. Dawson, Clarksburg, Ohio.
909,281—Wagon Dump. J. E. Camp, Washington, assignor to Camp Bros. & Co., Metamora, Ill.
909,755—Fifth Wheel. R. G. and L. Cator, Palmyra, N. Y.
909,365—Automobile Spring. L. S. Chadwick, Pottstown, Pa.
909,368—Wheel Tire Rim. J. A. Connor, Grogan, Ohio.
909,370—Axle Oiling Device. L. Damour, Trois Pistoles, Quebec, Can.
909,163—Compound Pump. J. Desmond, assignor to Artizan Brass Company, Chicago, Ill.
909,180—Tire. E. T. Greenfield, Kiamesha, N. Y.
909,181—Making Tires. E. T. Greenfield, Kiamesha, N. Y.
909,400—Cushion for Vehicles. P. F. Guthrie, assignor of one-half to E. J. Guthrie, Nutley, N. J.
909,402—Vehicle. A. Hage, Hildesheim, Germany.
12,909—Reissue, Draft Equalizer. H. J. Heider, Carroll, Iowa.
909,419—Tire for Vehicle Wheels. A. M. Janofsky, Chicago, Ill., assignor of one-third to A. E. M. Janofsky, Brooklyn, N. Y.
909,807—Steering Wheel for Automobiles. A. J. Kinnucan, assignor to Briscoe Manufacturing Company, Detroit, Mich.
909,629—Whip Socket. W. Luther, New Carlisle, Ind.
909,310—Adjustable Vehicle Thill. G. H. Mathews, New Market, Ia.
909,237—Storm Front for Vehicles. G. W. Scott, assignor to Star Storm Front Company, Troy, Ohio.
909,693—Vehicle Shaft Support. J. R. Scruggs, Holladay, Tenn.
909,475—Metallic Tread for Pneumatic Tires. M. C. St. John, Chicago, Ill.
909,718—Whip Holder. H. G. Weatherill, Elgin, Ill.
909,266—Wind Shield for Automobiles. H. H. White, Brookline, Mass.
910,457—Wheel Tire. R. F. Bryant, assignor of one-half to J. F. Harwood and J. H. Wood, Bloomington, Ill.
909,884—Pneumatic Tire Protector. J. O. Getz, Alameda, Cal.
910,123—Vehicle Brake. A. Godfrey, Bradford, assignor to Automatic Brake Company, Haverhill, Mass.
910,193—Vehicle Wheel. C. E. Harris, Carbondale, Colo.
910,287—Indicator for Motor Carriages. A. M. Hudson, New York.
910,065—Automobile Wind Shield. S. D. Hunter, Philadelphia, Pa.
910,001—Wheel. J. Jenkinson, Orofino, Idaho.
910,068—Wheel Lock. W. W. Jones, Chester, Wash.
910,206—Vehicle Wheel Sled Runner. J. Karssen, Holland, Mich.
910,134—Tire for Vehicles. E. Knowles, Providence, R. I.
910,396—Spring Wheel. A. Larson, Scobey, assignor of one-half to R. E. Patch, Poplar, Montana.
910,212—Locking Whip Socket. C. W. Mayhugh, Atchison, Kan.
910,081—Whip Socket. W. B. McMasters, Bellaire, assignor of one-half to A. C. Roach, Athens, Ohio.
910,232—Steering Device for Motor Vehicles. D. Roberts and C. James, Grantham, England.
910,424—Differential Axle. B. R. Seabrook, Los Angeles, Cal.
910,023—Cab Ventilator. E. Smith, Gordon, Pa.

Copies of above patents may be obtained for fifteen cents each by addressing John A. Saul, solicitor of patents, Fendall Building, Washington, D. C.

RECENTLY EXPIRED PATENTS OF INTEREST TO THE CARRIAGE TRADE.

Patents Expired December 15, 1908.

464,977—Hub Attaching Device. M. Logsdon and G. Braums, Jr., Kokomo, Ind.
464,983—Thill Iron. J. McCrudden, Flint, Mich.
465,041—Thill Coupling. G. W. Chandler, Ayer, Mass.
465,130—Whiffletree. J. B. Goundry, Denton, Mich.
465,310—Draft Equalizer. C. Anderson, South Bend, Ind.
465,370—Wagon Running Gear. F. H. Harris, Toledo, Ohio.

Patents Expired December 22, 1908.

465,528—Thill Attachment for Vehicles. W. Johnson, Grant City, Mo.
465,538—Thill Coupling. S. A. Root, Longmont, Colo.
465,625—Wagon Axle. Wm. Nehring, Evansville, Ind.
465,690—Vehicle Shafts. J. R. Brought, Mojave, Cal.
465,705—Wagon Axle. M. S. Tyler, Lansing, Mich.

Patents Expired December 29, 1908.

465,913—Tongue Support. C. Behringer, Defiance, Ohio.
465,918—Thill Coupling. D. S. Brown, Genoa, Ill.
466,059—Thill Coupling. J. O. Ferguson, Greenwich, N. Y.
466,079—Holdback Iron. A. Kerry, Marysville, Mich.
466,132—Electric Forge. E. E. Angell, Somerville, Mass.
466,133—Electric Forge. E. E. Angell, Somerville, Mass.

Patents Expired January 5, 1909.

466,386—Vehicle Thills. E. W. Van Valkenburg, Racine, Wis.
466,387—Vehicle Tongue. E. M. Van Valkenburg, Racine, Wis.
466,392—Tire Setter and Upsetter. P. Barnes, Pownal, Vt.
466,565—Wheel Tire. T. B. Jeffery, Chicago, Ill.
466,577—Wheel Tire. F. Schrader, Philadelphia, Pa.
466,615—Wagon. P. H. Munroe, Plainfield, Ill.
466,675—Vehicle Spring Brace. S. J. Graham, Colville, Wash.

Patents Expired January 12, 1909.

466,813—Running Gear for Vehicles. J. W. Vorwick, Monmouth, Ill.
466,840—Safety Device for Vehicles. G. Tischler and Charles Holmok, Cleveland, Ohio.
466,859—Vise. W. Bradbrook, Dysart, Iowa.
466,886—End Gate for Wagon Bodies. L. Buesing and H. F. Buesing, Waverly, Iowa.
910,094—Non-Puncturable Pneumatic Tire. E. A. Storey, Philadelphia, Pa.

The above lists of patents of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City.

Digitized by Google

Trade News From Near and Far

NEW FIRMS AND INCORPORATIONS.

Robinson-McGill Buggy Co., Columbia, Tenn., capital $10,000; incorporators John L. Robinson, J. N. Pigg, M. Swaine and others. The company purposes to buy and sell buggies, farm implements and machinery.

Klein Wagon Mfg. Co., New York, capital $7,500, to manufacture wagons, trucks, carts and vehicles. Incorporated by F. C. Walters, Charles J. Klein and others.

Barbourville, (Ky.) Wagon company, capital $10,000. Incorporated by W. B. Riley, C. C. Smith and A. L. Smith.

Taylor Carriage Company, capital $25,000, E. D. Taylor, president; A. B. Lovelace, vice-president; to conduct a general carriage and buggy business in Birmingham, Ala.

Hogland Wagon Company, Kansas City, Mo., capital $5,000. Incorporated by John Hogland, Fred J. Hogland, and others.

Welded Steel Wheel Co., Ellenville, N. Y., electric welding; capital $10,000. Incorporators: J. William Corrigan and Guy Osborn, Mt. Vernon, N. Y., J. W. Ebbs, Englewood Cliffs, N. J.

Dyersburg, (Tenn) Vehicle and Implement Co., Dyer county, capital $5,000. Incorporated by Messrs. H. N. Beard, W. S. Ridens, L. G. Norvell.

Commercial Truck company, New York City, capital $10,000; manufacture motors, engines, machinery, cars, carriages, etc. Incorporated by G. O. Dean, 1628 Amsterdam Avenue, Fred Knowlton, 527 East 147th street, and others.

Sterling Vehicle Company, location Jersey City, N. J., location in Illinois, Chicago, $153,000; capital in Illinois, $2,500.

Berry & Irgel, of Inwood, Queens County, N. Y., to deal in vehicles, etc., capital $4,000. The directors are: A. E. Berry, Bennhit Rigel and W. S. Pettit, of Far Rockaway.

The Gustav Schaefer Carriage and Wagon company, Cleveland, O., capital $75,000. Incorporated by Gustav Schaefer and others.

H. D. Wilson, of Villisea, Ia., has leased a store at Claimda, Ia., and will put in a line of buggies and farm implements.

The G. C. Janne company of Ottumwa, Ia., manufacturers of buggy supplies, will move its plant to Grinnell, Ia.

D. J. Veerman and Thomas Reiken have opened a carriage and buggy and sign painting shop in the Pekin plow works building, at Peoria, Ill.

Kunkel-Lebman Co., Brooklyn, N. Y., to manufacture carriages, wagons, etc.; capital $3,000; by Joseph Kunkel, Charles F. Lebman and others.

American Wagon Co., Wilmington, Del.; capital $100,000; by E. L. Squire, G. W. Dorsey and others.

V. E. Harris has just put in a full line of buggies, wagons and implements in Bartlett, Iowa.

John C. Dix, Son & Co. have incorporated in Memphis, Tenn., with a capital of $10,000, to deal in vehicles.

The Carver Wagon Co. has been incorporated in Morristown, Tenn., with a capital of $50,000, by P. R. Carver and others.

W. H. Underwood is just establishing a carriage factory in Sanford, Fla.

Schwab & Baldwin have engaged in the vehicle and implement business in Weeping Water, Neb.

W. E. Vandercook has opened a vehicle and implement business in Garrison, Neb., and will carry automobiles.

Robert Garrison is about to open a new stock of vehicles, etc., in Guide Rock, Neb.

The Quitman Vehicle & Harness Co. has been incorporated in Quitman, Miss., with a capital stock of $10,000.

Miller Bros. have engaged in the hardware and vehicle business in Rush Springs, Okla.

BUSINESS CHANGES.

K. C. Knudson has sold his interest in the firm of Knudson & Christense, at St. Edward, Nebraska, to Peter Jensen, of Lindsay. The new firm name is Christensen & Jensen, and it handles farm implements, wagons and buggies, hardware and furniture.

Through a deal completed Jan. 21, the management of the Elgin Wagon Works, Elgin, Ill., company has changed, and W. J. Poggensee of Chicago, has acquired the interest formerly owned by Attorney W. A. Paulson. The new company intends to continue its manufacture at Dundee, and will have its offices in Elgin, as heretofore. The new officers are as follows: President, W. H. Utt, Chicago; Secretary, Treasurer and Manager, W. J. Poggensee; Superintendent, O. A. Hank. The firm is capitalized at $100,000.

The Johaness Implement company of Nevada, Sedalia, Lamar and Rich Hill, Mo., has just closed a large deal whereby this firm becomes part of the Regal Buggy Company, of St. Louis.

Jas. Wanless, Viola, Wis., sold his wagon shop and blacksmith business to Joe Smelcer.

The Carolina Buggy company, Henderson, N. C., has been purchased by Mr. W. B. Waddill and will greatly enlarge its activities and capital.

Henry Schnack has sold out his vehicle and implement business in Scribner, Neb., to John Thernes.

Habbe Janssen has succeeded to the hardware and vehicle business of Gronewold & Janssen, in Gothenberg, Neb.

Doler Roulier has purchased the Crilly vehicle and implement business in Campbell, Neb.

John Janssen has purchased the vehicle and implement business of Pickerell & Co., in Sterling, Neb.

H. A. Elias has sold out his stock of vehicles, etc., in Manhattan, Kan., to W. B. McCormick.

F. M. Higgins has purchased the hardware and vehicle business of John Bowser, in Larkin, Kan.

C. W. Kingsbury has disposed of his hardware and buggy business in Mound City, Kan., to W. C. Long.

Lewis Young has sold out his implement and vehicle business in Wayne, Kan., to E. C. Rieppen & Son.

Geo. L. Wilcox has sold his stock of vehicles, etc., in Gretna, Neb., to P. A. Sanborn.

W. E. Thomas has disposed of his stock of vehicles, etc., in Hale, Mo., to H. F. Avery.

J. B. Keesaman has purchased the implement and vehicle business of J. H. Sheldon, in Lebo, Kan.

Reoler & Child have purchased the stock of vehicles and implements of L. M. Thomas, in Albion, Neb.

John Suhr has succeeded to the buggy and implement business of Meyer & Jorgenson, in Uehling, Neb.

Fred Germer has purchased the vehicle and implement business of George Kruse, in Bremen, Kan.

REVIVAL IN BUSINESS.

The increase to nine hours in the blacksmith department of the Moline (Ill.) Wagon Works on February 1 is said to be preliminary to inauguration of a longer workday in other departments. Orders in sight will keep the big plant busy in all departments till September 1.

On account of the rush of work in the wheel and carriage departments at the Heywood Bros. & Wakefield Co.'s plant, Gardner, Mass., the employes of those departments are working till 8 o'clock at night.

Digitized by Google

C. F. Myers, president of the United States Carriage Company, Columbus, O., in speaking of the outlook for business said that it is quite good, although the tariff agitation is injuring future contracts to some extent. The Columbus plant was kept fairly busy all of last year and orders have been coming in well during the last few weeks, especially from western sections of the country.

The officers of the Columbus (Ohio) Buggy Company say that the outlook for business the coming year is excellent, especially in the automobile line. The company has a large number of advance orders for both its electric and other machines on hand, and the outlook in the buggy and carriage trade is also good. The plant is in first-class condition to handle all the business which may come and the trade is expected to be back to normal proportions before the end of this year.

BUSINESS TROUBLES.

Nelson Higbee, the senior member of the Higbee Buggy Company, of Sheridan, Ind., has applied for the appointment of a receiver for the concern. The company is not financially embarrassed, but Higbee says that Frank V. Kercheval, who is an equal partner in the business, does not devote his attention to the interests of the company, according to agreement. He alleges that Kercheval teaches school six months in the year and also devotes much of his time to his duties as clerk of the town board of Sheridan to the detriment of the business of the company.

Judge John F. Phillips, of the Federal Court at Kansas City, Mo., has been petitioned to declare the W. L. Norris Carriage Company, 1701 Main street, insolvent and bankrupt. The petition was signed by Ellis, Cook & Ellis, attorneys for the creditors, the Graf-Morsbach Company, of Cincinnati; Kingman-Moore Implement Co., of Kansas City; Auto Supply Company and Auto Tire Company, of Kansas City.

Hon. J. W. Coulter, appointed by the court of common pleas as special commissioner to report the testimony and his findings in the suit brought to enforce the statutory liability of the stockholders of The Flickinger Wheel Company, has filed his report with the common pleas court at Bucyrus. The report is a most voluminous document, and includes the testimony, the finding of the special commissioner as to the facts involved and also his finding as to the law points governing the case.

An inventory of the assets of the Norwood Carriage Company, assigned, filed in the Insolvency Court, at Cincinnati, Ohio, values them at $1,731.27. A schedule of the company's debts places them at $2,320.86.

The verdict for $10,000 awarded Oscar Shake against the Kentucky Wagon Manufacturing Company will stand, Judge Emmet Field having denied the application for a new trial. Shake is 19 years old and was injured in an explosion in the engine room of the defendant's company on November 8, 1907.

FIRES.

The blacksmith shop and carriage repair shop of Eugene Storer, at Limington, Me., were burned to the ground on Jan. 10th. Loss on tools and material, $600; loss on buildings, $500.

The wagon factory of Bailey & Bowne, Utica, N. Y., was slightly damaged by fire on Jan. 4.

Fire did about $5,000 damage to the Taylor Carriage Co.'s plant at Birmingham, Ala., January 6.

The Rose Buggy Co.'s factory at Raleigh, N. C., sustained a $500 damage by fire on January 20.

The Jonesboro hub factory, at Jonesboro, Ark., was damaged by fire January 25 to the extent of $50.

The Abbott-Downing carriage factory at Concord, N. H., suffered slight damage by fire on January 30.

Fire destroyed the plant of the American Tubular Axle Company, at Toledo, Ohio, on February 2, causing a loss of $125,000.

PERSONAL MENTION.

R. L. Rhea, formerly manager of the Smith Wagon Works at Pekin, Ill., has accepted a position as general manager of the St. Joseph Plow Co., of St. Joseph, Missouri.

George Evans, of Moline, Ill., has accepted the position of cashier with the Velie Carriage Company, of Moline. He succeeds C. D. Britton who has been transferred to the Velie Motor Car Co., office.

James S. Beatty, formerly connected with the Sheldon Axle Co., Wilkesbarre, Pa., has accepted a position with the Hess Spring & Axle Co., Carthage, Ohio, as general sales manager.

Fred O. Arnold succeeds J. F. Cooper as manager of the Hillsdale (Mich.) Truck and Wagon Co.

P. J. Clevenger succeeds J. L. Moneypenny as manager of Western Vehicle and Supply Co. at Topeka, Kan.

MISCELLANEOUS.

Arthur Guerin, Salem, Mass., has built an addition, to his carriage making shop at 285 Bridge Street.

Both the Hickman-Ebbert and the Owensboro Wagon company factories resumed operations on Jan. 18, at Owensboro, Ky.

After several months of slack work the employes of the Hercules Buggy Co., at Evansville, Ind., resumed operations on a nine hour schedule on Jan. 11. A week later a 10 hour schedule was put into effect.

The Lindsey Wagon company, of Laurel, Miss., contemplates establishing a branch factory at Winfield, La., to manufacture the eight wheel log wagon that he been on the market for the past five years.

Arrangements have been perfected whereby the Agee Wagon Works will be removed from Camden to Eldorado, Ark., and capitalized at $75,000.

Cranford and Snyder have moved into their new and splendidly equipped carriage shop at Winston, N. C.

P. H. Condon is about to erect a carriage repository at Bristol, Conn., to be 40 x 60 feet and three stories high.

The Brown Carriage Co. of Cincinnati will establish a branch at Oklahoma City, Okla.

Plans are under way to operate the big plant of the Bodley Wagon Company, New South Memphis. This company went into the hands of a receiver last May.

The Sturtevant-Larrabee Company announces that the producing force of the plant will be doubled within a few weeks, that new machinery of the most modern type will be installed, and that the manufacture of an entirely new line of medium price sleighs, carriages and bob sleds will be commenced.

George Panneton, of Waterbury, Conn., has let the contract for the erection of a carriage factory, two stories high, of brick, 43x100 feet.

Fitzgibbons Brothers, Monroe, Wis., will enlarge their carriage plant this spring by the addition of a three-story wing, 40x100 feet.

Tilghman Statler, retired carriage builder and one of Allentown's (Pa.) oldest residents, celebrated his ninety-first birthday anniversary January 23.

S. E. Bailey & Co., Lancaster, Pa., have just received a contract from the New York City Fire Department to build twenty-two fire chiefs' heavy buggies, equipped with 1¼-inch rubber tires and with the regulation fire gong.

P. C. Walster has leased a large building at 28 State St., Binghamton, N. Y., containing 8,000 square feet of floor space to be used as a paint shop and for storage purposes. This maker gives him more than 11,000 square feet. Mr. Waltser says he has purchased the entire balance of stock owned by the Groton Carriage Company, which recently retired from business. The material comprises parts and fittings for surreys, carriages, runabouts and other vehicles to the extent of several carloads. As soon as this shipment is received Mr. Walster will begin making up vehicles for the spring and summer trade.

Digitized by Google

The Pekin (Ill) Wagon Co., is having its entire office reno vated and installing new fitures.

D. F. Tanner, Holland, N. Y., recently added a large building for storage purposes to his already extensive plant.

The F. O. Bailey Company, of Portland, Me., have leased the lower floor of the F. P. Moore carriage repository on Water street and will open a repository. J. M. Scribner, formerly of Charleston, Me., will be in charge.

M. J. Dunn & Co., wagon manufacturers of Springfield, Mass., have removed their business from 83-91 Dwight street to their new factory buildings, corner of Fulton and Emery streets.

Following a lull of two weeks in the operations by the Elkhart (Ind.) Carriage & Harness Manufacturing Company, the big Riverside plant, during which time the force went back to a nine-hour day, the time was again increased to ten hours on January 29. Business in the carriage industry has recently been stimulated to a greater activity. The Elkhart plant has a good accumulation of orders.

The Sanford (Fla.) Carriage Works will erect building and install machinery for manufacturing buggies and wagons. Will also install general blacksmith equipment.

The plant of the Gottlieb Spoke and Axehandle Factory, of Baton Rouge is being installed as a part of the Wood Coloring & Manufacturing Company's plant, at Corbin, La., which is doubling its capacity of 10,000 spokes per day.

Theodore Schwadeas will retire from the firm of Lippert & Schwadeas, wagon dealers and blacksmiths, at Gloversville, N. Y. Mr. Schwadeas has leased the buildings at the corner of North Market and Green streets and will enter into a co-partnership with Albert Coppernoll, of Ephratah. The new firm will conduct a carriage repository, repair and blacksmith shops.

Atlanta, Ga., is to have an automobile factory. Clarence Houston, of the Atlanta Buggy Company and Harry W. Anderson, F. H. Long, S. W. Foster and others applied for a charter for the White Star Automobile Company; capital stock, $150,000. The right is asked to manufacture automobiles buggies, surries and all their accessories.

Geo. W. Jones, of Asbury Park, N. J., will become a member of the firm of Hoyt & Lewis, carriage builders at Burlington, N. J., the latter part of February.

Lonsdale & Gehm is the style of the firm which succeeds Lonsdale & Enright at Syracuse, N. Y. Mr. Gehm, the new member, is a thorough blacksmith and will look after that end of the business.

J. F. Ryan is closing out his carriage and harness business in Clinton, Iowa.

D. R. Labbe & Sons, of Eugene, Ore., will enlarge their warehouse to make more room for carriages.

TO PROMOTE GOOD BREEDING.

A movement is being promoted to make it easier for foreign breeders to send their mares to America for the purpose of breedng them to trotting stallions and then taking them back to their foreign homes. Several trotting mares from Russia, Holland and Austria were sent over last season to be mated, and the customs regulations caused so much annoyance and expense to their owners that it is safe to say these men will never ship brood mares to America again. It is proposed to have the laws so amended that mares sent here to be bred to American horses can come in free under proper safeguards in the same way that foreign mares of recognized breeds brought here to be used for breeding purposes are admitted without payment of duty when duly registered in the stud books recognized by the Department of Agriculture. President Roosevelt has become very much interested in the matter and has directed the attention of the Secretary of Agriculture to the need of immediate legislation in the interest of American horse owners.

Would you prosper to-morrow? Work faithfully to-day.

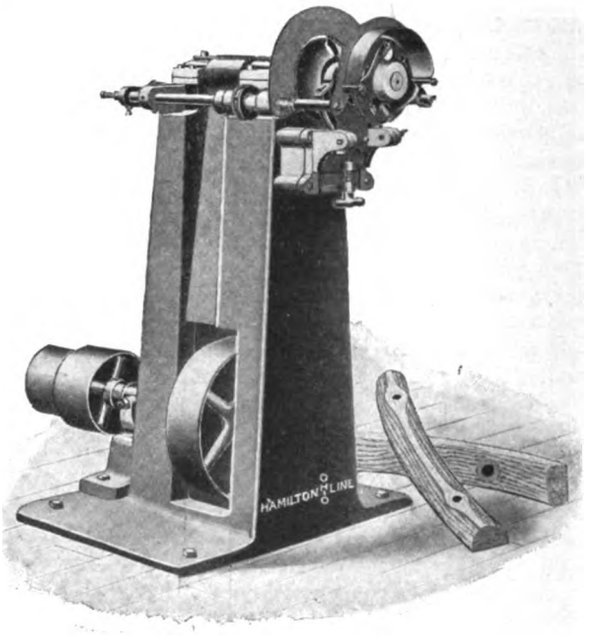
IMPROVED FELLOE-ROUNDING MACHINE.

The felloe-rounding machine here illustrated has special merit not only in the heavy column frame, differing from the others, but also in the different and superior arrangement of the operating parts.

The countershaft arrangement places the driving belt in the center of the column, with the tight and loose pulleys outside of the frame, so the belt connection can be made from any side.

The journal boxes are cast solid with the frame, the front one very close to the cutterhead. Two horizontal turned bars are placed one on each side of the top of the frame, forming the support for the half-circle side guide, on which it can be adjusted for wide or narrow felloes. Both bars are firmly fastened by set screws and they will not slide back and forward.

To adjust the circular side guides for greater or less distance apart it is only necessary to turn the screw sleeves right or left.



Hamilton Felloe or Rim Rounder No. 173.

This can be done while the machine is in motion, the guides remaining hinged to the left side bars. By loosening a milled set screw on the right bar, the guides can be swung back, retaining the given adjustment and requiring no resetting. The center guide or rest between the two cutterheads on which the felloe rests can be raised or lowered at will during the operation of rounding. It is attached by a lever hinge at its lower end to a sliding bracket, permitting the guide to be raised and lowered or swung back out of the way.

The cutterhead is of greatly improved pattern, especially in the seat and adjustment of the knives, and one pair, consisting of two halves, which admits of adjustment for different widths, is furnished with each machine. The flat seat or shoulder for the spoke is also produced, and in the most accurate and uniform manner.

For further information write the Bentel & Margedant Co., manufacturers of wood-working machinery of all kinds, Hamilton, Ohio, U. S. A.

NEW AUTO COMPANY ENTERS FIELD.

The Indiana Carriage and Automobile Company, Indianapolis, Ind., is a newly incorporated concern which succeeds the Indiana Carriage Company. C. E. Wilson is president, F. R. Bernard, secretary, and M. G. Beckner, treasurer and general manager.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

Does the Cost Protect?

The automobile industry has passed through several vicissitudes which were breathing spells, as it were, preparatory to another start. The possibility of making the automobile anything else than a thing of pleasure did not occur to the earlier builders for a long time. It was some years before a builder here and there began turning out light cars for use, such as physicians' cars and commercial cars. These early efforts were regarded with doubt by many. It was the commercial truck which made the first practical departure possible, and its wonderful adaptability to various lines of work made it a necessity which soon developed into a steady business.

Buggy builders have no reason to be alarmed at the inroads the motor buggy is making, notwithstanding its popularity. Its cost protects, which they believe will never be materially lowered. On this point there is room for a wide difference of opinion. Progressive builders, especially the designers of chassis, believe that a decidedly lower level of cost is within easy reach, and that certain radical improvements now in process of development will soon make possible the building of an auto buggy at what will prove to be a popular price. Preparations are now in progress in two or three automobile plants in the west to build a type of buggy along these lines.

Want Cheaper Fuel.

The necessity for a cheaper fuel for commercial cars is being emphasized in certain quarters. Cheaper fuel would not be objected to by the owners of cars of any kind. The call for cheaper fuel seems to come from the commercial car builders who only reflect the complaint of owners who would like to reduce this element of cost. With crude oil at 16c. and gasoline at 18c. there is not much to choose between. The fuel people and chemists are testing and figuring and arguing without making any apparent headway. During the past few weeks papers have appeared on fuel and its possible cheapening which encourages the investigators in this field to hope for favorable results. The non-expert observer, however, cannot reasonably see any way out to cheaper fuel.

Block Construction.

Probably more importance is being attached to the casting of parts of automobiles in one or two sections than the matter deserves. The easier access in case of repairs is of course an advantage. The advocates of block casting enumerate a long list of advantages, which may be justly claimed, but many builders will no doubt prefer to adhere to the separate casting or separate production of each part. The new oxy-acetylene flame facilitates this form of construction, and as it affords some economy it will no doubt influence many to adopt it.

The Right Basis of Comparison.

For a long time builders of commercial vehicles argued in favor of using that vehicle from the standpoint of its value over horses. The common-sense point of view is not its superiority over the horse and the horse-drawn vehicle, but the ability of the truck to meet an entirely new set of conditions, demands and possibilities. Strange to say, when the commercial truck first came, the speed of travel and the extraordinary efficiency were not clearly foreseen. A look at some of the pioneers shows this. The original narrow field of supplanting a few horses has latterly been enlarged by broader commercial requirements, expanding business in cities, and and entirely different sort of local conditions. Rapid as has been the broadening of the field for the commercial truck, it is even now in its infancy. Even the isolated disappointments and the occasional return of experimenting firms to horse-drawn vehicles acts as a stimulus to builders to overcome, one after another, the fleeting objections which arise while the machine is being perfected—up to ideal conditions.

A New Field.

The springing up of passenger and, in a lesser degree, freight service by automobiles is a feature of this year's development. Public automobile service promises to become a larger source of demand than either pleasure automobiles or trucks. Some owners of western garages have been expressing themselves on this point. They are in a position to make their observations valuable. Of course the simple reason is that automobile lines pay. They pay better in the west than in the east. It might be supposed the abundance of trolley service would cut down to an unprofitable extent the opportunities for automobile 'bus lines, but the contrary appears to be the case.

Quite a number of projects are now on foot, and before the end of the year there will be a demand of some magnitude from this new and inviting field.

Faults of Lubrication.

The defects which the best lubricating systems unexpectedly develop have aroused inventive talent of automobile engineers, out of which has arisen a so-called double lubricating system. The faults of lubrication are many, and have taxed the ingenuity of experts. The loss of time, the item of repairs on account of bad lubrication are many and have taxed the ingenuity of experts. The loss of time, the item of repairs on account of bad lubrication and other disadvantages may be, in part at least, remedied by a double source. The method is ingenious and apparently practical.

Digitized by Google

THE BUZZ BUGGY.

The carriage manufacturer who is attracted to the new proposition of building high wheel motor buggies is confronted with almost as many difficult, as well as perplexing problems, as was the automobile engineer and builder when he pre-empted the American field.

His progress towards perfection will be long and arduous, and his private graveyard will, no doubt, be filled with as much discarded junk as was that of his prototype, who has now "arrived" after years of tinkering.

Somehow the vehicular transportation of this land leans to lightness of construction. It was that kind of genius that meddled with a heavy wagon until it was refined and attenuated, first to the "jaggar" type, then after years, to its final flower of expression as typified in the Brewster buggy, a marvel of combined strength and lightness.

Probably the moving cause is our speed mania. Beginning with our Flora Temples and miles in 2:40, we file away at records until we grow horses that turn into marvels, make harness like strings of cotton yarn for lightness, and nickel steel for strength, and fasten all to buggies that have the resiliency and strength of whalebone, and almost the lightness of the zephyr.

We see this genius manifested in the modification of the American built auto car. Following the foreign models, we at first had all the weight of the original, likewise a servile copy. Then American talent fell to tinkering as usual, and the lines of experiment all tend to reduction of weight.

Today the models, the claims, the arguments are all to show how light and how strong. It is an education along these lines to read the mutual friendly (!) criticism that one maker alleges against an anonymous other maker by has catalogue plea as to what he has accomplished in weight reduction, that you can't find elsewhere so perfectly done. And the evolution is not by any means at its end.

The final expression of the heavy car will be something altogether admirable, weighing about thirteen ounces to the pound, instead of sixteen.

The buggy-motor is now in its first stages of development, and has a long and hard road to travel to reach the goal of perfection, but it is only a matter of time, experiment and the burying of a large amount of capital, (in the aggregate), in fruitful tinkering.

The buggy builder has rather the hardest task of any yet set. He must have lightness of construction, he must secure simplicity of detail in engine, and he must produce all at a low price, and yet secure a profit. This is quite a sum in arithmetic, and many will be the aching heads that figure on the problem.

It is in this field that we shall discover at last the perfection of the air-cooled engine, but the necessity of reduced weight will make invention acute to discover how to still further improve that present day marvel, the modern gas engine.

It will be found also, probably, that wood sills or frames reinforced in some manner, will prove not only stronger, but better shock and vibration absorbers than the present steel frame practice.

But before the flower of this achievement is plucked, there will be a very considerable quantity of kindling wood made for the furnace, due to abortive attempts.

But, after all, while this will be a good beginning it will be only one mile-stone on the journey. The buggy practical will be taken in hand, to be evolved into the buggy beautiful in its new phase, and that will consume time, thought and more money for experiment.

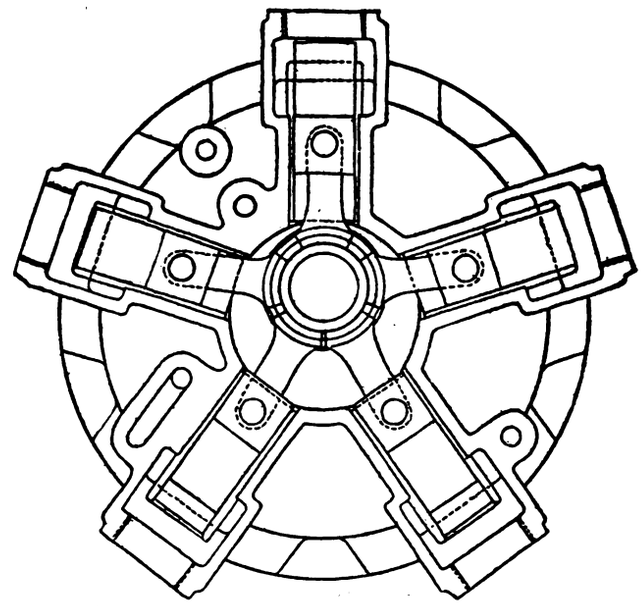
The new vehicle it would appear, thus opens up a new era for the carriage builder, and he will have to be the architect of his own fortunes, as he has little or nothing tangible to guide him. His brains must make him win. He will be competent to the task.

NEW HYDRAULIC DRIVE.

May Prove Greatest Novelty of the Year in the World of Automobiles.

By applying the principles of hydraulics to the problem of power transmission Charles M. Manly, for many years connected with the Smithsonian Institution, in Washington, after ten years of experiments, has practically perfected an invention that may prove the greatest novelty of the year in the automobile field. at least with regard to commercial vehicles. By its use four of the greatest drawbacks to the ordinary mechanical transmission —the clutch, changing of gears, differential and brake—are eliminated as mechanical parts.

In the automobile, in fact, the new system takes the place of everything between the engine and wheels. Except for the steering wheel and column, one control lever alone is required, this filling all the requirements ordinarily met by the gears, clutch and brake. The lever in neutral means that the machine cannot



be moved forward or backward. To move forward the lever is simply pushed forward to the degree in which speed is required. To reverse the lever is moved backwards. That is how the new transmission works in actual use.

For the last eighteen months an ordinary truck body, fitted with the new form of transmission, has been running about the streets of New York and Brooklyn loaded with rock, sand and gravel, the total weight being 8,600 pounds. In charge of men who possess no knowledge of automobiles, it has threaded its way through the heaviest traffic on West and other congested streets without an accident, and, because of its flexibility, with less loss of time, it is claimed, than any other vehicle under the same conditions.

This truck is fitted with a sixteen horse power B., L. & M. runabout engine. The load is of a nature to offer the greatest resistance to haulage in proportion to its weight, as with constant jolting it has become wedged in and possesses no resiliency. The emergency brake still remains on the truck, wired back and rusted from long disuse.

The new drive has no stated number of speeds. It possesses all speeds ahead and backward, with the flexibility of a steam engine. Speed is apparently only a question of providing for the limit desired. The power necessary for starting or climbing hills is entirely a question of traction. The hauling power, it has been proved, is in direct proportion as speed is decreased, making possible the use of smaller engines.

The new drive or transmission is an arrangement of a "mas-

Digitized by Google

ter" pump and one or more motors. Oil is used instead of water because its lubricates and does not freeze. The oil fills every case and requires renewal infrequently. With the testing truck less than a pint a week, added before beginning the week's work, has proved sufficient, according to Mr. Manly. The motors, which are duplicates of the pump as to size of cylinders, are not adjustable, but give results in harmony with the stroke of the pump.

It has been the inventor's idea to provide at first a drive suitable for heavy work such as trucking. Less than one per cent. of the trucking in New York City, it is estimated, is done by mechanical power. For this kind of work the transmission is necessarily heavy. In fact, from the standpoint of weight the Manly drive is probably heavier than other transmissions which include all the parts not contained as mechanism in the new invention. The difference in weight, however, Mr. Manly claims, will not be great enough to prove a factor to be considered.

Questioned as to the availability of the new drive for use in touring cars, Mr. Manly said that it might be some time before he would begin the application of the system to other than commercial vehicles. For pleasure cars the same principle in a lighter design will answer.

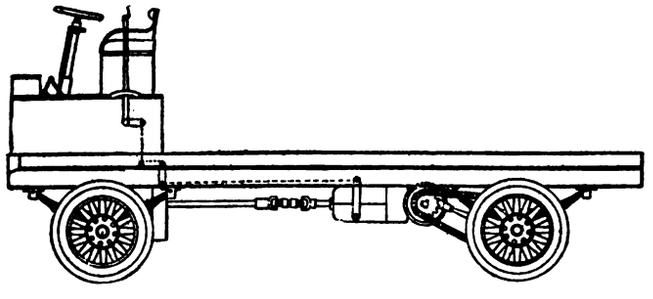
It was during his connection with the Smithsonian Institution that Mr. Manly found the necessity of a hydraulic variable speed gear, which he invented. Out of this invention has grown the Manly drive, with all its revolutionary possibilities on the automobile and other industries.

The drive for motor trucks consists essentially of three units—a pump, the engine shaft, and two motors, each connected by a chain and sprocket to one of the rear wheels.

The pump consists of a stationary casting, which in this present machine comprises five cylinders radiating from a round crank chamber, and mounted in each of these five cylinders is a piston, all connected by rods to a single crank pin. Formed in the main casting by the side of each cylinder is a chamber containing a valve, and all five of these valves are connected by their rods to a single crank which is driven directly by the pump crank.

Each of the motors is exactly like the pump, except that the stroke of the crank of the motors is greater than that of the pump. The crank shaft of the pump, being directly connected to the engine crank shaft, always runs at the same speed as the engine shaft.

The variations in speed of the truck wheels are produced by varying the length of stroke of the pump crank, this crank being of a special construction permitting the length of stroke of its

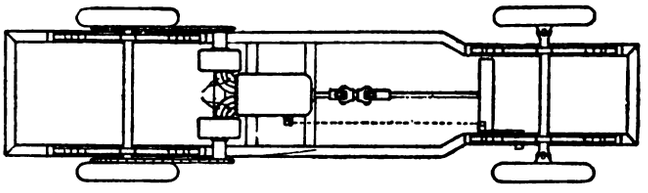


crank pin to be varied from a maximum through all lengths of stroke down to zero, in which latter case, of course, the crank pin is concentric with the crank shaft and, therefore, when in this condition rotation of it produces no motion of the pump pistons.

The length of stroke of the motor crank is not variable, and it is necessary therefore to furnish a definite quantity of oil to cause the motor to make one complete turn of its crank shaft. Each of the motors having a crank stroke twice as great as the stroke of the pump crank, and there being two of them, when the pump is adjusted to its maximum stroke the pump crank must make four revolutions in order to revolve both motors one revolution.

If the pump crank is adjusted to one-tenth stroke it must then make forty revolutions in order to pump enough oil to make the two motors make, one revolution, and similarly if the pump crank is adjusted to one one-thousandth stroke it must make four hundred revolutions in order to cause the two motors to make one revolution. By this means the variation in the length of stroke of the pump crank controls the speed of the truck wheels.

If this were all the control given by the mechanism it would be necessary, of course, to have a reverse gearing for causing the truck to run backward, but by a simple method of connecting the pump valve crank to the main pump crank reverse speeds are obtained by continuing the adjustment of the pump crank through zero to the opposite side, and while, if it were desired, all speeds in the reverse direction up to the maximum speed could be obtained, yet in practice the drive as applied to



trucks is so constructed that it is not possible to run the truck backward at a speed greater than one-quarter the maximum forward speed.

Many attempts have previously been made to construct a variable speed transmission, using a hydraulic pump and motor as a basis, but in practically all experiments the variation in speed has been produced through by-passing a part of the fluid from the pump and sending to the motor only such an amount as would cause it to revolve at whatever speed was desired. The fatal error in such arrangement was that the fluid which was by-passed represented just so much engine power wasted and therefore the pulling power of the vehicle was no greater at low speeds than at high speeds.

With the Manly drive no by-pass is used, the speed being controlled by varying the stroke of the pump and thus varying the amount of fluid put into circulation, and since at short stroke the same engine power is able to pump against an increased length of stroke, the hauling power of the vehicle is increased in exact proportion as the speed is decreased, the pressure of the fluid at one-tenth speed being ten times the fluid pressure at high speed.

AUTOMOBILE LIFE.

The present problem of automobile building is to perfect the machine. Along that line there is yet a good deal to do. After that is consummated the thing to do will be to prolong its life. It is estimated that the general life of an automobile is five years. Skill and closer study of constructional possibilities and of best material that can be used are extending its possible life. In fact, some makes now on the market, it can be safely asserted, are good for much more than five years.

While in its relatively incompleted form the question of duration is not so important, the importance of length of life will present itself for manufacturers' consideration as soon as the point is reached where a practically complete machine can be presented to the world. Improvements will never cease, but practical completion is not remote. A ten-year machine is cheaper than a five or eight-year machine. The guaranty of the future will possibly be based on life, conditioned on proper and fair use.

The Jewel Motor Car Co. has been incorporated in Massillon, Ohio, with a capital of $250,000.

The Worthing-Clark Auto Co. has been incorporated in Fond du Lac, Wis., with a capital of $20,000, by G. W. Worthing and others.

Digitized by Google

Licensed Manufacturers' Show

Approach to Standardization Seen in Models on Display—The Day of the Small Car.

The verdict of those who attended the automobile show of the Association of Licensed Automobile Manufacturers in Madison Square Garden, New York, January 16 to 23, was that it was the biggest and best ever held. It was big in point of attendance, big in class of cars displayed, and big in number of sales made. Probably no other automobile show in the country ever reached the proportions of this one.

Decorative Details Attractive.

That no detail had been neglected in the way of making the Garden attractive was shown in the finished effect. It was little less than dazzling. The throngs of well groomed men and handsomely gowned women moved in the blaze of ten thousand electric lights, the beauty of which reached its full height at the point where a magnificent triumphal arch towered to a height of sixty feet, from the sides of which eight hundred square feet of mirrors reflected the animated assemblage.

By way of relief from the great glare of light the spacious floor of the Garden was covered with a carpet of green, pleasing to the eye and soft to the tread. The general color scheme of the show, however, was brown and white. In conspicuous positions were shown the emblem of the show, an eagle with outstretched wings, resting on the wheel of an automobile. It was one of the most attractive features of the decorative scheme.

In front of each stand was a tail post, with a glass lantern at the top, after the fashion of the old style street lamps, and upon the glass was inscribed the name of the car shown. Thus, at a glance and from a distance, persons whose tastes ran along particular lines, were told where to go.

The national show seemed different this year, perhaps because the manufacturers had learned what the public was really interested in, and planned their exhibits accordingly. There was no display of a hodge-podge of miscellaneous models, gathered with no order of reason. Instead, each manufacturer showed four or five cars varying in type so as to cover his entire output, and let it go at that. The exhibit this year was a credit to the manufacturers for this reason, if for none other. The spectator and the man who came to buy found spread out before him the offering of the American market, classified according to price and style, and he had simply to place his finger on this or that car and in little or no time he learned whether it was within his price limit or not.

Trend Toward Standardization.

The new models exhibited brought out the fact that American manufacturers are making great progress toward the standardization of important parts, which furnishes proof that the automobile of the present time is considered approximately perfect. Instead of trying to introduce novelties the designers working for this year's trade appear to have devoted their time toward making more perfect the features that have come to be considered indispensable under the forms in which they have been used. That some definite results have been achieved is apparent.

Many of the parts in the better known makes of cars appear to be almost exactly the same as are used on other cars of the same grade, showing the tendency to make these parts in their accepted design a standard that shall be retained until some revolutionary improvement dooms them to the scrap heap. Some of the more optimistic automobilists, noting the gradual trend toward standardization, look forward to the time when it will be possible to make a repair in case of emergency by substituting a part from a car of another make.

General Refinement in Design.

In general appearance, too, the makers appear to have arrived at a standard. The touring model of one manufacturer does not look unlike the same type made by his rival. So with the town car, the racy runabout and all the others that go to make up the total of new models. As at the previous show, the salient feature for 1909 is refinement in design. This has been accomplished without radical changes, so that the average model for this year resembles greatly that of 1908 except that it is more attractive. The swanlike curves and fantastic configuration so dominant a few years since have given way to straight line work, comfortable seats, and the requisite amount of foot room.

It is in luxury of appointments that variations are seen. The man who wants the most luxurious appointments finds it only a matter of money, but the less critical owner will get equally good service with his less pretentious car. In appointments, however, great strides have been made. To judge from some of the interiors at the Garden this year a fortune can be spent on the inside of a car alone, the decorators stopping at nothing that adds to comfort, refinement and restfulness.

Longer Wheelbase.

As a general rule the wheelbase in the 1909 cars is longer than formerly, and this in turn indicates more room in the cars. The lengthening has been in all the types of cars, from the little runabout to the big touring car, with the exception of the town car and taxicab types, where they have been kept short, to give a good turning radius in the congested streets of the cities.

In bodies for town cars and taxicabs, the driver's foot room is reduced to a minimum. The motors are made as short as possible, and the wheelbase is made within a hundred inches; however, the side entrance is provided with a wide door and the space for the occupants is roomy, with spacious seats, while easy riding qualities are assured through having the seat to the front of the rear axle.

Body Work and Upholstery.

A more extended use of sheet steel is noticeable in body work in the past few years. In some cases this sheet steel is aluminum coated or otherwise suitably protected as against the formation of oxides. Metal bodies are looked upon with much favor; they are very prevalent, and aluminum is still used extensively. The framing work is invariably of wood and the center of gravity is held extremely low.

The upholstery in the better class of bodies is in hand buff leather of the best selections, with occasional examples in suitable cloth fabrics, notably in town cars. For the less expensive types of cars machine buff cowhide obtains.

Day of the Small Car.

If additional proof were needed that this is the day of the small car, it was furnished at the Garden show. As at the Palace, a majority of the manufacturers are prepared to cater to those who desire a high grade car for less money than has been demanded in past years. Even the makers who have in the past produced only large machines are in many instances reaching out for the newer class of trade. Those who have made it a practice to bring out the medium priced automobiles are building them this year in greater variety, and some appear to be prepared to meet every possible demand of the buyer in the way of models. The small car, of course, has always been produced. Ten years ago the American enthusiast had seen nothing else, nor is it

Digitized by Google

probable that many of the old timers looked forward to the time when the big car would hold sway, as it has done in the last few years. The small car of the past, however, was not the equal of the product that is similarly described these days in power, stability, finish or workmanship.

The moderate priced small car of 1909 is a much better mechanical product than even the same type of last year. How it compares with the early small cars may be judged from the result of the first important road race ever held on Long Island, when the first car with a gasoline engine finished third, covering fifty miles in two and a half hours.

The consideration of stable construction in small cars is what appeals to the present day automobilist, as well as to the prospective owner. Many automobilists welcome the opportunity to select a low priced machine of proved reliability in order to avoid the cost of maintaining a large car, which they have owned because of the fear that the small machine would lack efficiency.

So much have the medium and low priced cars improved that they now easily fill the requirements of the man who is not given to extensive touring. Not that they will not make a long journey, provided too many people are not carried. It may be said, however, that virtual guarantees of touring efficiency are given with many of the inexpensive four and five seaters at the Garden and at the previous exhibition.

In regard to value received, the probability is that the small car of the two seater type will prove more satisfactory in the long run. It proves entirely adequate for hill climbing and will run far above the general speed limit on any kind of fair road. Its light weight makes it an easy car on tires, and even when replacement is necessary the item of economy enters into calculations, as it need not necessarily be fitted with as large tires as its bigger brother.

The automobilist who buys one of this year's small cars need fear no loss of dignity when his machine stands alongside one of the huge touring cars. He can get the name, the finish, and, in short, a literal reproduction in miniature of many of the fashionable large cars, practically guaranteed to run as smoothly as the car twice the price. What the little automobiles can do was shown a few weeks back at Savannah.

One result of the general introduction to the public of the low and moderate priced car seems likely to be that many owners of large touring models will add to their possessions one of these economical small machines, so that the former may remain in the garage when its less imposing mate will meet the requirements.

Fewer Six Cylinder Cars in Proportion.

The six cylinder idea does not appear to have spread to any appreciable extent among the members of the association that conducted the Garden show. Out of nearly one hundred and thirty models turned out hardly ten per cent. were of the six cylinder type. The percentage is affected, of course, by the tendency to produce the now popular small car. Nine of the firms showed "sixes" at the Garden, as follows: Franklin, Palmer-Singer, Lozier, Peerless, Pierce, Stevens-Duryea, Thomas, Winton and Stearns.

One remarkable feature about the six cylinders is that several of the manufacturers are using them on comparatively low powered cars, evidently a proof that they are convinced that superior flexibility can be gained by the use of the greater number of cylinders. The Lozier Company, for instance, has a new model, called the "Little Six," rated at only 33 horse power, while on the Thomas "sixes" is of only 31 horse power. The Pierce and Stevens-Duryea companies turn out six cylinder cars rated at 36 horse power. All these are of less power than is commonly associated with a "six" engine.

White the Only Steamer.

The show had only one steam car—the White—which is well known to automobilists. This year's White created almost as much interest at the London show a few weeks ago as the Daimlers fitted with the silent Knight engine. The firm has adopted a newly designed engine which is fitted with the Joy valve motion instead of the Stephenson. In the newly designed engine the valve is directly actuated from connecting rods, greatly simplifying operation through the reduction of parts. The number of parts is reduced by almost a half, thus saving weight and reducing wear on tires.

Transmission.

In transmissions, the selective type seems to be in the majority, and direct high is the most used combination. Some hold to the progressive; there was at least one semi-progressive exhibited; planetary gears are as before used in certain classes of work. The workmanship is on a high plane, using alloy steel or special grades of steel in about every case. The levers and linkages are well designed, and the materials good. Examples of the "left-hand steer" were shown, and it may be the plan will grow.

A tendency to use better wheels is noticeable, and the rims are largely of the "demountable" or other "quick detach" plan. Spare wheels are used, some with rims only. In other cases the entire wheel is furnished.

DETACHABLE RIMS.

In the past year the mechanical branch of the Association of Licensed Automobile Manufacturers has, with good results, made a careful study of the detachable rim question. This, it must be understood, is the type of rim in which certain parts are actually detached, as for instance, one of the beads. On the other hand, in the past few years the so-called demountable rim has come to the fore, and this also has now had the attention of the engineers of the automobile manufacturers.

The demountable rim is one which is actually demounted as a whole from the wheel. This class of tire-detaching means affords the opportunity of blowing up the tires and carying them all ready for use and, in emergency, substituting one of them for the deflated tire when encountering trouble on the road.

This question of demountable rims has been the subject of discussion at the Mechanical Branch meetings, and some of the engineers delegated to investigate will soon have formulated a report which will cover the situation to great advantage.

The requirements of such a type of construction have been long realized and the relation of the demountable to the detachable rim has been for some time one of the points under consideration.

Various suggestions of the engineers have been recorded with the engineering department of the Association of Licensed Automobile Manufacturers, 7 East Forty-second street, New York, and when the final discussion on this subject is had, no doubt there will be good prospects for ultimately unifying the construction and design for the benefit of the users of automobiles as well as of the manufacturers.

LIMOUSINE AND LANDAULET BODIES.

Description is given herewith of two automobile bodies built by Flandrau & Co., of New York, and exhibited at the recent automobile show held in the Grand Central Palace, in New York.

Landaulet Body.

Illustrated on page 417.

The Hotchkiss Import Company exhibited at the Grand Central Palace show in New York a Flandrau & Company extension-front Landaulet Body, which is new in design, beautiful in workmanship and finish, and mounted upon a Hotchkiss 16-20 town chassis.

This is not a large body, and yet there is room for five persons inside, if required. Though the extension-front is short, this is acquired by placing a large drop seat in the partition and putting springs in it, stuffing it the same as the rear seat, which is also made with springs in the cushion and the back, but are

Digitized by Google

especially made so as to make a very comfortable and luxurious seat.

The interior of the car is trimmed with the finest quality Bedford cord, with a beautiful lace, carrying out the tone of colors in the car, this being set off with lighter, almost white background, producing a most pleasing and beautiful interior. Carpets and curtains match the trimmings.

The car is fitted with a lady's tray on the left hand side in the division, and a gentleman's tray on the right hand side, having the necessary articles. These trays are covered with lizard skin so as to match the interior. Megaphone to the chauffeur. Electric light in the roof, with separate battery.

The front seat is covered with an extension-roof; this has a skirt of the finest grain leather, edged with brass, and side curtains for the front seat. This has the regular glass front, opening inwardly and outwardly, with frames of mahogany. The front seat is covered with leather, and has rubber on the boards. The outside of the body is painted a beautiful deep maroon shade, and the mouldings are black. The top is made of straight grained leather, and is beautiful in workmanship. The top lies flat and has a cover for rain. All the windows may be dropped.

The car is mounted with four sheet steel fenders, with inner and outer skirts to protect the body and the hood; also leather skirt sbetween the running boards and the body.

The painting of the body is carried out in a beautiful but lighter shade of maroon, and striped with black. Although this is a light town car, the body is quite roomy for it, and while it looks short as extension-fronts do, it has all the room of a very large body, and is a beautiful example of the coach builder's art.

Limousine Body.

Illustrated on page 417.

This limousine body is built entirely of wood with the exception of the lower quarter panel, which on account of the double sweep downwards and along the side of the body, is found necessary to be made of hammered aluminum, in order to get the proper sweep. A wooden panel there would look stiff, and would detract from the rich appearance of the body.

The rear panels of the body are made of bent white wood, or poplar, showing the possibilities of wood bending, as applied to carriage building. The wooden body, with a proper amount of workmanship in constructing it, weighs no more than an aluminum body, which has to be greatly stiffened on account of its ductility.

The handles of the doors have in the shank a separate Yale lock with key for locking the doors.

The body is made quite light in weight, and yet quite roomy, as it will accommodate three persons upon the rear seat.

There is an ingenious pair of seats fitted to the front partition in such a manner, that the seats are entirely concealed from view and cannot be noticed, suggesting that no seats had been placed there. These seats are sliding seats, and the method of fitting and trimming them is done in so artistic a manner as to produce a very pleasing effect at the partition, and not allow the seats to be seen.

The frames are made of the finest mahogany, stained a deep shade to give them an old or antique appearance, and are bound with rubber tubing to prevent vibration.

The glass is the finest French sheet glass, and the windows are easily raised by the lifters, which are made of lace.

The inside of the car is trimmed with electric blue cloth of a beautiful shade, matching the color of the panels exactly, and the lace embroidery and all the cord which makes up the trays, the doors, etc., brings out the effect of the trimming inside, which is of two shades of blue. There are no tuftings anywhere in the car excepting in the rear cushion and back. This rear cushion and back is made in the form of a large arm chair. When two persons are sitting on the seat they are kept from being thrown sideways by the motion of the car when it is rounding corners or sudden turnings by the manner in which the back is made. A third person may sit on this seat very comfortably way back against the upholstery. The springs for these cushions and back are especially made for this car to carry a certain weight upon the seats. All the hair is the purest white hair, picked by hand. It is of the finest quality.

Carpets match the interior trimmings, and are felt lined with rubber on the bottom.

There are pockets in the quarters, a tray on the left hand side for a lady. This has two bottles with golden tops, card case, pin tray, memorandum pad and pencil, separate hand mirror. On the right hand side a tray for a gentleman, having a card case, match case and electric cigar lighter. In the roof is an electric bulb especially imported by the celebrated Dinin manufacturer; the Dinin battery also being used, and placed under the rear seat. There are trays in the roof for hats and packages made of the same colors of cord as appear throughout the inside of the car. Hooks for coats, and loops for umbrellas, canes, et cetera, are in convenient parts of the car. A megaphone to the chauffeur is finished in black with brass rims. The support for the roof is also in black, with brass centre.

The lamps are new style, having six sides, match up nicely with the body and make a striking appearance, as they are entirely of black with the exception of the edges, which are of brass They are attached to the battery of the inside dome light, and are lighted by electricity, either from the inside or the outside.

Around the roof is a fine skirt of the thickest imported grain skirting, brilliantly finished and edged with brass. Two side curtains on each side are made of varnished McIntosh, having celluloid panes.

The outside seat, for chauffeur and passenger, is covered with a blue leather, matching the panels of the car.

Rubber mats, bound with brass, are fitted on the toe boards.

The painting of the upper part of the body and all of the mouldings is a jet black, and the lower panels of the body, rear door and around the windows are in the Austrian royal blue—a very brilliant and beautiful color. A novel striping is around the body, which is carried out throughout the car, matching the brass mountings of the hood, etc., by striping the edges of the mouldings with pure gold leaf, instead of bronze, which is generally used and which does not last well and is not as brilliant as the gold.

The wind shield at the front is a new feature; the posts are made by hand, all forged iron, with rounded outer edges, square inside, and the shield is made in two parts, opening inwardly to the roof, fastening there to the straps; or, outwardly, so that the chauffeur may see between the upper and lower glass, in a rain or snow storm. This is held in place by solid brass supports, with ratchet grooves on the side.

The frames are made of mahogany, to match the windows, and also the linings of the roof.

Flandrau & Company have also mounted the chassis with steel fenders, of semi-touring style, having inner skirts at the rear to protect the body, and inner skirts at the front to protect the hood, and outer skirts on the front fenders to protect the wind shield and front seat.

The running boards are covered with rubber and fitted with grooved brass edges.

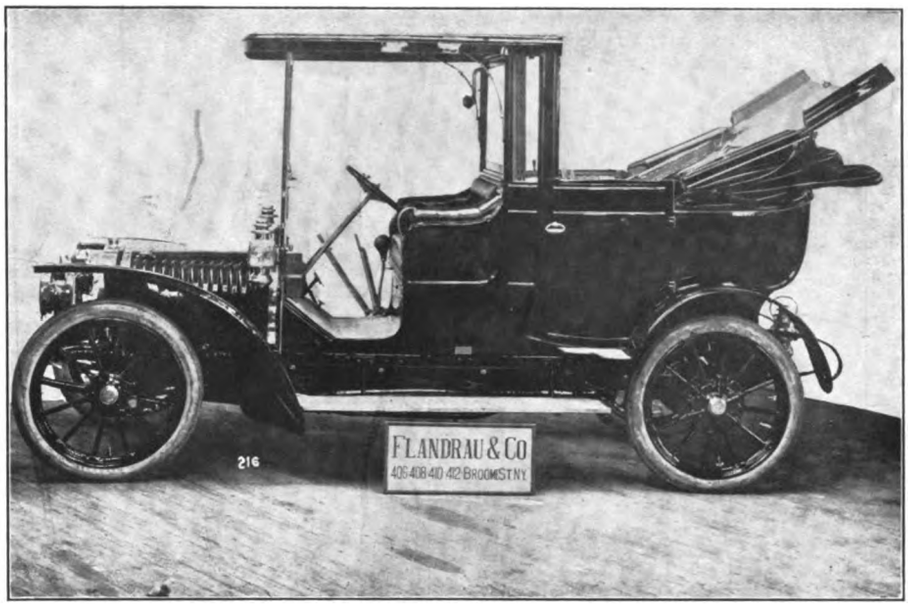
The chassis is painted the same color of Austrian royal blue, and striped in a novel manner, carried out in gold leaf with brass edging of the hood, body, etc. There are no stripes on the spokes of the wheels at all, the rims being striped a broad band of gold leaf, which permits the beautiful blue of the wheels to be seen.

Between the chassis and the running board a leather skirt is fitted, of double leather, entirely hiding the mechanism below and giving a great deal of character to the chassis.

Flandrau & Company have carried out explicitly the orders of Messrs. Panhard & Levasser to build as beautiful and attractive a car as it is possible to produce, without regard to cost, and at the same time insisting that it shall be most comfortable and luxurious for the owner.

Digitized by Google

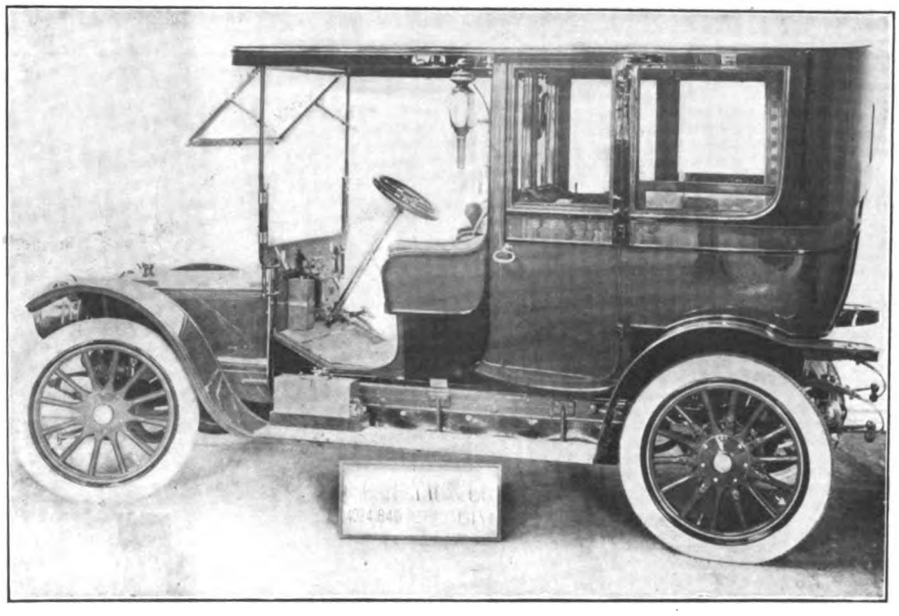
Illustrated Automobile Section, February, 1909



LANDAULET BODY ON HOTCHKISS CHASSIS.

Body built by Flandrau & Co., New York.

Described on page 415.

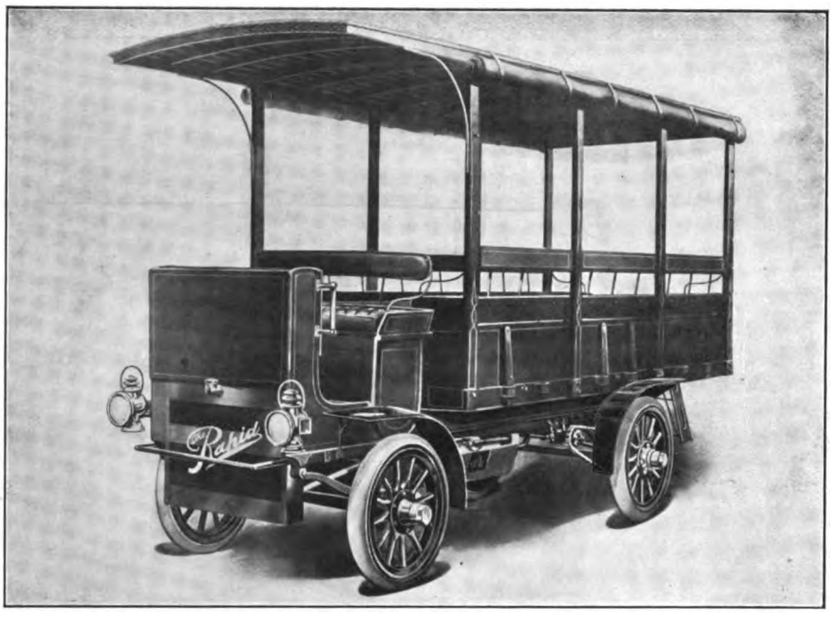


LIMOUSINE BODY ON PANHARD & LEVASSER CHASSIS.

Body built by Flandrau & Co., New York.

Described on page 416.

Digitized by Google



MODEL F 420C TWENTY-PASSENGER COMBINATION CAR.

Built by Rapid Motor Vehicle Co., Pontiac, Mich.



TEN-TON MEAT TRUCK.

Built by Mack Bros. Motor Car Co., Allentown, Pa.

Digitized by Google



WHOLESALE ICE DELIVERY TRUCK ON AMERICAN CHASSIS.

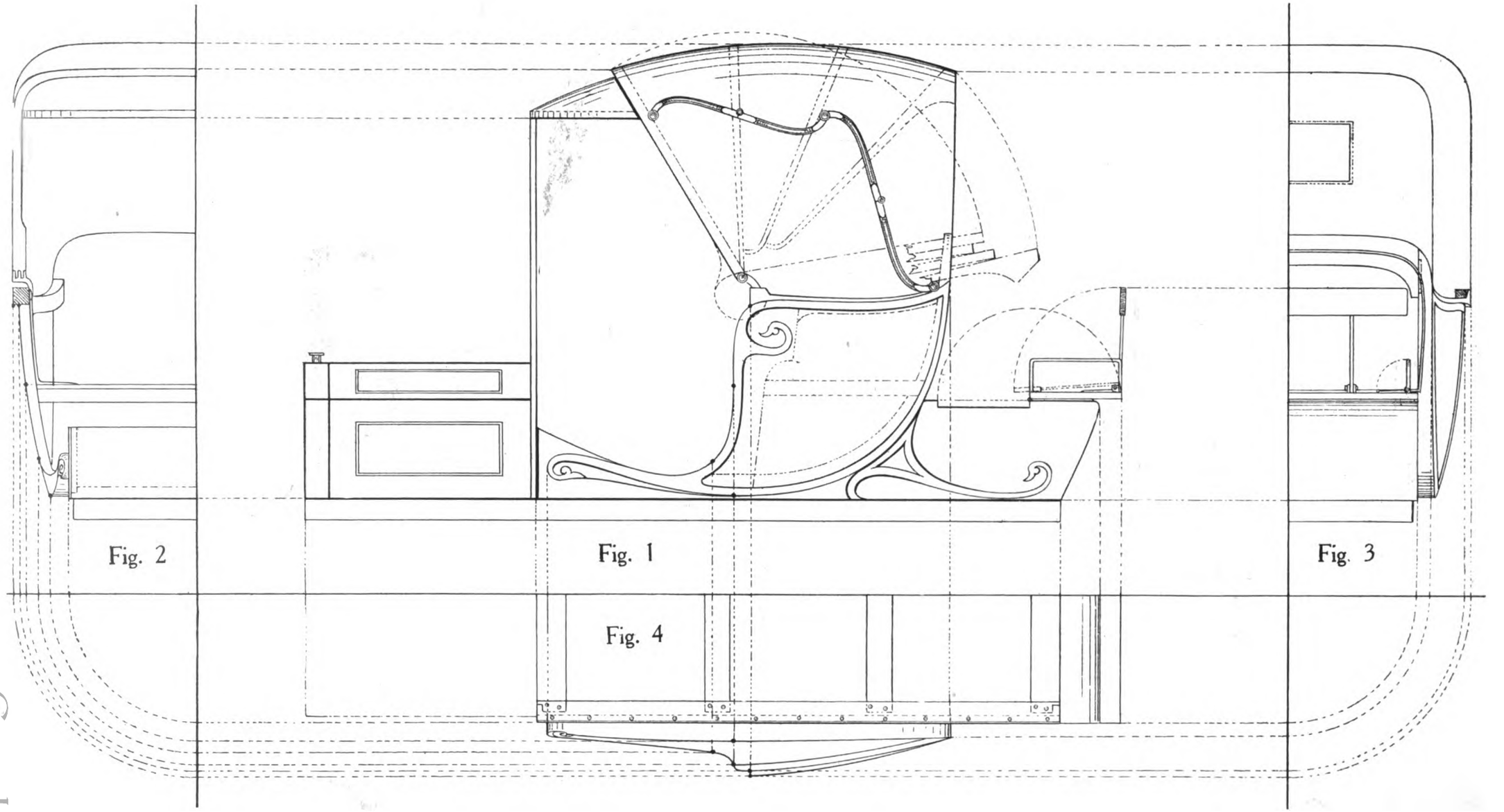
Built by American Motor Truck Co., Lockport, N. Y.



HEWITT TRUCK.

Equipped with Kelly-Springfield Sectional Tires.

Digitized by Google



WORKING DRAFT OF CABRIOLET MOTOR BODY.

Described on opposite page.

Digitized by Google

Body Construction and Finish

WORKING DRAFT OF A CABRIOLET-MOTOR BODY.

It stands to the credit of the French, that they quickened and gave birth to the motor car as we know it to-day—also that the nations of Europe and America had to follow in their wake.

It was not, however, until these countries had amended their laws, and repealed those which rendered the manufacture of motor vehicle prohibitive commercially, that they could take up a competitive position. This they have accomplished, and are now France's formidable competitors for the motor car trade of the world.

In design, the French offer a prolific originality, hence in this controlling element, they are the mentors of their competitors to a very large extent. There is one grand feature in the French, they possess a quick inventiveness and are never at a loss to infuse their models with live and effective lines, which tell their own story among the motor car buyers throughout the world.

The lines of the cabriolet motor body, of which we give a working draft here, is an inspiration from the French, who excel in this particular style of work. Of course, the lines as worked out in the drawing are more flowing by reason of their length, and firmer in their pronouncement to suit western tastes than the French, and works out a singularly smart style of car.

There is a very wide field for a light car to carry two people but it must be smart, and have a style and design of high character, together with a propelling power of simple and light, but effective engineering, and the whole with high class finish, governed by a price within the means of those who could afford not more than two-thirds the present marketable prices demanded for them.

Such an ideal car in design, is that shown in the working draft herewith, if the engineering could be worked out to fulfill the conditions projected. But while it is strictly a carriage trade journal's mission to deal with the automobile as a carriage, it is quite in order that the motive power should also be discussed.

It is not by any means to be thought that because an engineer is absorbed in live mechanism that it is his sole monopoly, because some of the greatest achievements in engineering have been accomplished by men who were not by profession engineers at all. The cabriolet herewith is in design singularly well adapted for electrical power, while it approaches the horse-drawn carriage ideally.

The body is given a heavy quarter, and relieved with scroll moulding at the top of the front pillar. The scroll end of the moulding is planted on, and jointed to the front moulding on the chain line. The pillar itself is sufficiently wide at the top to allow of the moulding being pinned to the panel and the inside of the pillar. The bottomside is made to the depth of the chain line shown on the quarter panel, and following on to the front scroll bracket arm. The panel part of the bracket is boxed down, and the moulding and scroll carved on, the front pillar is made to the width shown is the quarter, and stamp tenon framed into the bottomside and screwed up from underneath. The corner pillar is half checked to the bottomside, on slip tenon framed to it, with shoulder lip, which prevents the joint from shifting, while the elbow is half checked to the front pillar, and haunched to the corner pillar.

The scroll moulding on the hind boot is planted on to the solid side, and is cut out of mahogany panel board to the scroll design shown. The hind boot is solid sided out of 7/8 in. stuff, and continued up to the rocker line at the bracket, but cut out to the shape of the bottomside on top and bracket line, and screwed to the bottomside. Of course the bottomside on the outer surface is dressed up square, and on the quarter side to the level of the side sweep from the elbow downward—as projected on the half plan in Fig. 4.

The boot is made with an emergency seat to fold up, out of the way into the inside of the boot. Light luggage can be carried in the inside as well, the body being cased off in line with the inside of the back panel cross bar, so that the front of the body underneath the seat can be used for the storage of tools or small packages.

The hood is fitted up as cabriolets are usually done, but with a sliding up bonnet shade, which rests in front upon the top of the windage screen. The hood is fitted up with double side joints, made on the lines shown in the elevation. While the slats are the same as are usually used in this work, and the head covered with enamel leather, Fig. 1 shows the elevation of the body, and the moulding outline of the framing, while the chain lines show the various widths of the timbers as got out.

Fig. 2 shows the half front section, and point proggings of the pillar's contour which are projected into the half plan Fig. 4.

Fig. 3 shows the half back section of the body and boot, together with the hinging centres of the back-rest and side-rails. the points of the body's widths being projected into the half plan.

Fig. 4 shows the half plan from which every point of the body's width is got. The front or sham door pillar is dressed up with the horizontal square in the first place, and framed into the bottomside. Of course the line of the elbow sweep alters the surface in rounding the body in, but pillar must be framed in, in the first place of the horizontal line. In a proper use of the horizontal, both as a square and a bevel, is where a technical knowledge of body making comes in, and the use of these tools have a varied and important bearing in the wide range of carriage and motor body construction. The quarter and back panels are of 1/4 in. mahogany-giggered into the moulding grooves—while the boot is of 7/8 in. birch or walnut. The boot bottomsides are half check framed to the sides as shown in Fig. 4, and the cross bars framed into position in the bottomsides.

The sizes of the body are as follows:

Whole length of body on bottomside line over boot on chassis, 5 ft. 9 in. Depth of boot side, 13 in.; depth of body on pillar line 25½ in. Length of elbow on pillar line, 26 in. On seat line over all, 25½ in. Distances from front of pillar on seat line 26 in. Depth of rocker at bracket, 9 in. Height of head from seat to square line 4½ in.; rise on roof line, 3½ in. Length of hood on horizontal line, 45 in.; length of sun shade bonnet 14½ in. Width of body on back 38 in. Width across body on seat line over pillars 45 in, across top of pillars 46½, over elbow piece and head, 48 in. Width across bracket rocker 34 in.; across hind boot, 34 in.; width of boot seat, 12 in.

UPHOLSTERING A CABRIOLET MOTOR BODY.

The designing of the interior trimming of a motor carriage, or of any carriage, is very much akin to the designing of the body itself. One builder may make a brougham to lines individual to himself, but as he turns out carriage after carriage, altered lines suggest themselves to his observation—they may be only slight—but sufficient to strike the eye as a departure.

A quarter may be a little deeper, or a little shallower or longer or shorter as the case may be than what obtained, or a curve

Digitized by Google

may be a little quicker or fainter and so on, which in the aggregate make up a body of alterations of sufficient value to be of a striking difference when one carriage is placed against the other as contrasting styles.

And so it is in designing upholstery, it is most difficult to make entirely new creations, but encroaching upon parts that show a striking surface, is the only true way of evolving new styles as an ultimate new decorative surface.

But the design of a cariage itself is largely responsible for the style and character of its trimming, hence, every distinct

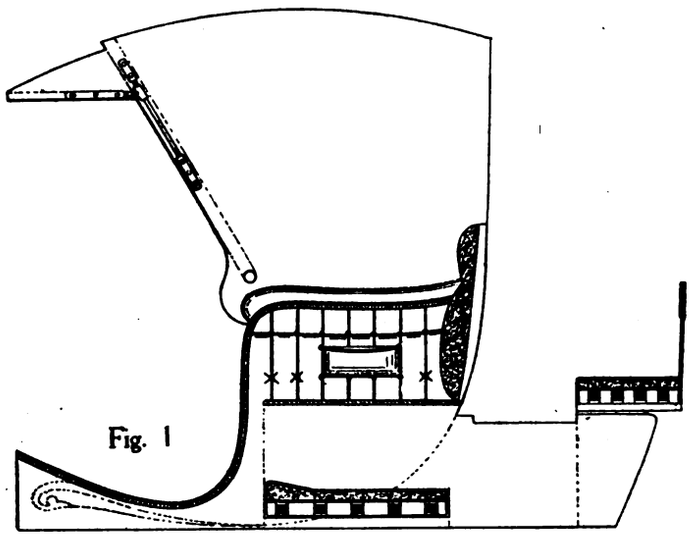


Fig. 1

design of carriage, has its corresponding style of decorative upholstery.

The design for trimming a cabriolet motor body given here is of very plain surfacing—but it has been frequently pointed out in The Hub, in these special articles on trimming, that it is the plainness that is such a severe test of a trimmer's ability, because in working the squabbing up, there is no outlet for illicit package; the work must be a good job, or a failure.

Fig. 1 shows the inside view of a motor cabriolet body—with hind boot and emergency folding seat fitted to it. The quarter squab is worked in plain column pleating and finished

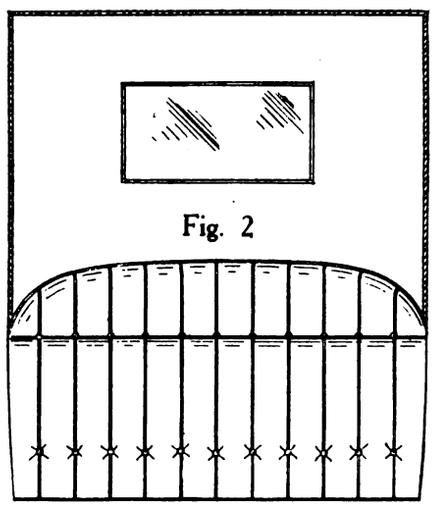


Fig. 2

with coping figurings at top, the division being made with a horizontal pleating. A pocket is worked in the bottom of the squab, while the depth of the quarter is greatly favored by the elbow roll. The head is shown in cloth surface. The front slat is shown with the sliding rod fixed to it for the sun shade bonnet to work upon—the huge flap on the shade slat being centre jointed to allow of the shade being slid up and down on the rod—when the head is down. An end section of the back squab is shown on the quarter. The squab is stuffed with hair, but of course, light coil springs are used in back squabs as well as in seats.

The seat cushion is made in coil springs and hair surfacing as explained in Fig. 3, the end of which is shown in projection in Fig. 1.

Fig. 4 shows the projected plan of the emergency seat cushion, which is held to the seat with straps—these, of course, are

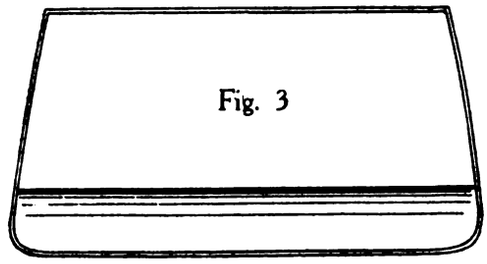


Fig. 3

better buckled on the edgeway of the cushion—though they are shown with the buckles across the top in the plan. It is also fitted with coil springs as shown in the end section in Fig. 1.

Fig. 2 shows the back squab and back light in the top back of head—this is made in celluloid and stitched into the enamel leather in welting fashion. It is a capital material, for while it supplies an excellent light as a substitute for glass, it can be folded in curve with the head leather when the head is down.

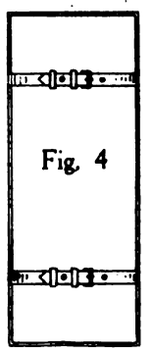


Fig. 4

The style of the back rest squab is in plain column pleating with copings on the top formed with a horizontal pleating line to match the quarter squab.

A rich drab material makes a very smart trimming, in which case piping is the best to make the cushions up with, but lace looks richer in the quarters.

LIFE OF AN AUTOMOBILE.

Charles B. Shanks, of the F. B. Stearns Company, of Cleveland, who is reputed somewhat of a statistician among his newspaper friends, has figured out that the average life of an automobile is just about five years. Possibly the Stearns hustler bases his computations from the public motor car statistics made up by the fatherland of automobiling—France—where they figure from 1903, when there were 12,984 registered motor cars in that country, and when 6,900 cars were manufactured and 350 imported. At the end of 1903, however, there were only 17,107 automobiles, against the 23,234 that there would have been had all of them remained in service. By taking similar comparisons for the following years the estimate of 4.99 years as the average period of usefulness for an automobile was evolved, a period that will probably lengthen as the industry advances.

DANGEROUS PROPELLING POWER.

The use of alcohol for propelling power in automobiles is being discussed. In some cases of speed mania the suspicion is that there has been an overuse of it.—Baltimore American.

Digitized by Google

WEDGE-SHAPED WIND SCREENS.

From Motor Car Manufacturers' Art Journal (London).

The accompanying illustrations show a new invention in wind screens for automobiles.

The use of this wind screen is to lessen the air resistance, which straight wind screens of other styles increase by fast traveling—by giving the same wedge-shape, and it is safe to say that the new invention will be a welcome one.

The construction of the wind screen is a little different to those now in use. The screen is here divided in the middle through a standard a. This standard is put in the front of the dash, so as the connection between a and the tube support b is giving an angle. The standard a is fastened underneath the roof with a hinge, and is with a screw plate fixed to the lower part of the smaller windows.

On the standard are two window frames c, fastened with double hinges, and also in the same way to the roof stick. The invention is in the double hinge, and both the windows c can be opened with the standard a as center or also opened in a position underneath the roof, as shown dotted in the drawing.

It is really of great use in damp weather to remove the driver's window in an easy manner like this, as the rain on the glass obstructs the view. By this arrangement the driver's

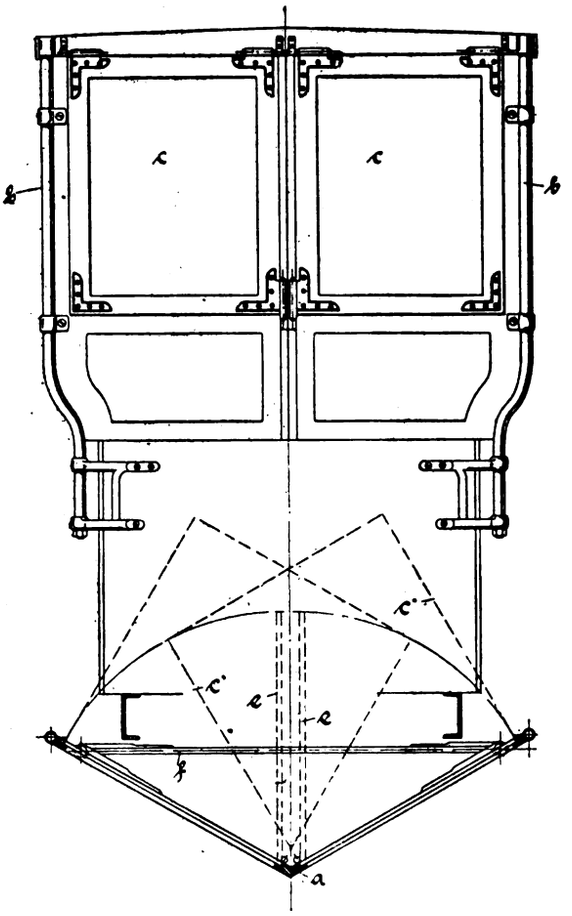


FIG. 1.

window can be removed and the window in front of the passenger can remain standing.

Fig. 2 shows the construction of a similar wind screen, as that one shown in Fig. 1. The difference between both windows are that in Fig. 2 the windows are in one from the dash to the top. The standard a, Fig. 2, is fastened to the roof-stick, and to the dash and the windows c are only to a fixed with hinge.

The action of the windows in this screen is round standard a, with a as center and both windows can be opened in the position c as shown in the plan or only one of the windows and then in the position d shown in the plan.

The use of this construction is just the same as the one in

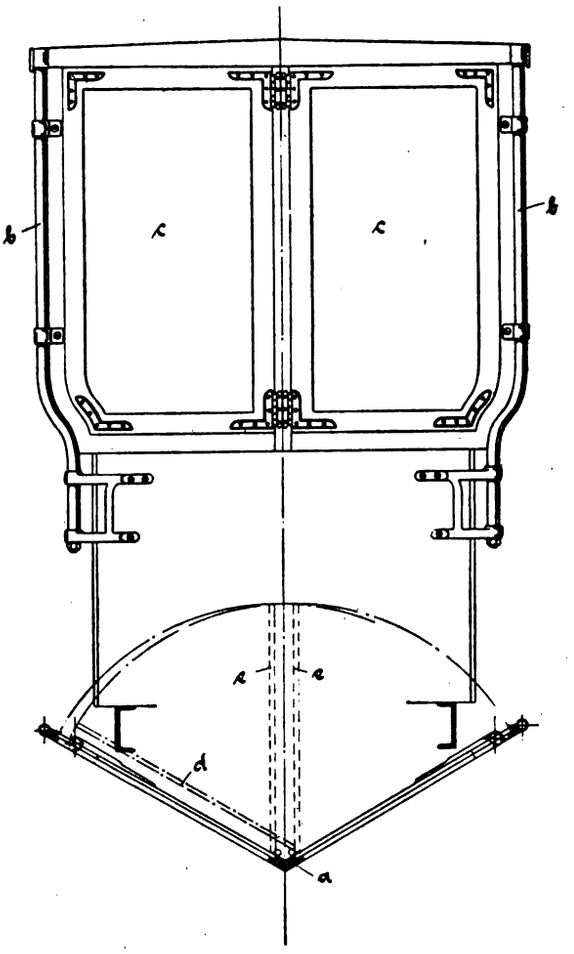


FIG. 2.

Fig. 1, but the windows do not turn up under the roof. If it is required that the windows should turn up under the roof then the arrangement as shown in Fig. 1 must be adopted.

GOODRICH "WIRELESS" MOTOR TRUCK TIRE.

It is not at all strange in this age of motor vehicles that word should come from the famous rubber plant of B. F. Goodrich Co. that they have perfected a new type of tire for the heavy vehicle of commerce, better known as the motor truck.

On the highway it will resemble other tires, but a closer investigation will demonstrate that it is constructed along entirely new lines and is in reality what it is called, the "wireless" tire.

Built on a base of steel, with a sub-base of hard rubber, it graduates to the tread, where a soft rubber carries the load with ease and grace over the thoroughfares to destination.

There are many points of advantage claimed by the company that make the "wireless" motor truck tire superior to the various types now in use. These are enumerated in the B. F. Goodrich Co.'s advertisement on another page.

The Goodrich "wireless" tire is built on scientific principles, and all who know the reputation of this house further know that the "wireless" has certainly made good under the severest tests or it would not bear the imprint of "Goodrich." A complete description with illustration is a part of the ad.

If you are building commercial motor vehicles, you had better look up the "wireless" motor truck tire. The company will be pleased to furnish you with full particulars, including prices, discounts, etc. Write now.

Digitized by Google

AUTO INCORPORATIONS.

Maxwell-Briscoe-Syracuse Co., Syracuse, N. Y., to manufacture automobiles and other vehicles; capital $2,000; by S. A. Anderson, John R. Turner, and others.

Benz Auto Import Co., of America, to import and deal in automobiles, capital $30,000, by David Weingarten and Oscar Weingarten, 377 Broadway, New York, and others.

Jackson Automobile Co., capital $5,000, general automobile business, by Harold S. Merry, 26 Tennyson Street, A. P. Teele, 42 Court Street, Boston.

The Eagle Motor Car Co., Cincinnati, O.; capital $10,000; by R. D. Anderson, and others.

Munsing Motor Car Co., Hoboken, N. J., manufacture automobiles, capital $1,000,000, by W. H. Buresmith, J. P. Franklin, and others.

Doyle-Curran Motor Car Co., St. Louis, Mo.; capital $3,000; by C. P. Curran, E. M. Doyle, and others. To manufacture and deal in automobiles, etc.

Carl Klemp Co., Chicago, Ill., to manufacture automobiles and accessories; capital $2,100; incorporated by Carl Klemp and others.

The Scientific Research Co., New York, manufacture automobiles, etc., capital $100,000, by A. E. Rannet, A. M. Day, and A. J. Robinson.

Ward-Harris Auto Co., Ft. Smith, Ark.; capital $25,000; by J. N. Ward, president; R. P. Harris, vice-president; F. N. Ward, secretary.

Badger Four Wheel Drive Auto Co., Clintonville, Wis.; capital $45,000; by W. H. Finney and others.

Kennedy Ideal Carbureter Co., Boston, Mass., general automobile business, capital $55,000, by W. E. Spear, and others.

Owners' Auto Supply & Manufacturing Co., New York, to manufacture automobile sundries; capital $100,000; by G. B. Moore, 521 West 122d street, and others.

Ried Automobile Company, Fort Worth, Tex., capital $15,000, by R. T. Reid, H. H. Hunter, and others.

New Rochelle Motor Car Co., New Rochelle, N. Y., to manufacture motors, engines, cars, carriages, wagons and boats; capital $10,000; by R. A. Joyce, Frederick Ott, John Ott and others.

Pierce-Arrow Motor Car Co., Buffalo, N. Y., to manufacture automobiles, capital $1,500,000, by George K. Birge, Henry May, and others.

Poertner Motor Car Co., New York, to manufacture motors and automobiles; capital $20,000; by William C. Poertner, 1876 Broadway, and others.

The Auto Shop Co., Ashtabula, O., capital $10,000, by Grant Parker, and others.

Bilbro Auto Co., to manufacture automobiles, New York, capital $20,000; incorporated by James E. Troy, 412 St. Nicholas avenue, and others.

Bellman Auto Co., Patchogue, N. Y.; capital $10,000; deal in motors, by E. R. Bellman, Bayport, N. Y., Charles S. Skinner, 16 West 127th St., New York, and others.

Interborough Auto Repair & Supply Co., Cold Spring, N. Y.; capital $15,000; to build automobiles and electric cars, by Frederick Verdon, Daniel McElroy and others.

Kellogg Mfg. Co., Rochester, N. Y., to manufacture automobiles; capital $25,000; by George W. Kellogg and others.

The Reid Automobile Company, Fort Worth Texas; capital $15,000; by R. H. Hunter, W. C. Stonestreet and others.

Auto-Car Manufacturing Co., Buffalo, N. Y.; capital $250,000; by John B. Pierce, G. W. Atterbury and others, to manufacture automobiles.

The Yakima Auto Co. has been incorporated in North Yakima, Wash., with a capital of $25,000, by Lee Little and others.

The Wonder Motor Car Co. has been incorporated in Kansas City, Mo., with a capital stock of $35,000.

The Swingley Motor Car Co. has been incorporated in St. Louis, Mo., with a capital stock of $10,000.

The Lake Avenue Automobile Co. has been incorporated in Cleveland, Ohio, with a capital stock of $30,000.

The Merchants' Automobile Co. has been incorporated in Cincinnati, Ohio, with a capital of $10,000.

The Hickman-Lauson-Diener Co., of Milwaukee, Wis., has been incorporated with a capital of $20,000 to deal in automobiles.

The Cory Motor Car Co. has been incorporated in Oklahoma City, Okla., with a capital of $25,000.

The Fritz Bros. Automobile Co. has but recently been incorporated in Oklahoma City, Okla., by C. D. Fritz and others.

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, 5 cents a word. Initials and figures count as words. Minimum price, 30 cents for each advertisement.

Wants

FOR SALE.

For Sale—To settle an estate, owned almost entirely by women, the carriage opportunity of a life time is presented. Going concern, established over half a century. Reputation on heavy and light carriages and automobile bodies. Unexcelled building 90 x 114, five stories and basement. In town of 50,000. Will sell or lease. Address "E. T. C.," care The Hub, 24-26 Murray street, New York City.

For Sale—Carriage, wagon and automobile business. City of 70,000; growing rapidly. Established twenty-five years. High reputation and best trade of city. Central location. 130 feet frontage. Property will double in value in five years. 1,200 square feet floor space. Nets $3,000 to $5,000 per annum. Over 700 automobiles owned in the town. Capital needed $12,000 or more. Age and failing health reason for selling. Address "X. Y. Z.," care The Hub, 24 Murray street, New York, N. Y.

HELP WANTED.

Wanted—General superintendent for one of the largest carriage factories in the country. A man of experience and one able to get out good, salable work, and who is able to keep down shop costs. Address "A. B. C.," care The Hub, 24 Murray street, New York City.

Wanted—Vehicle salesman well acquainted with the territory of the South Atlantic States, especially Georgia, Florida and Alabama, to represent a factory of large output building a medium priced line. Excellent opportunity. Henderson-Hull Co., Savannah, Ga.

Wanted—Competent foreman in carriage factory. Must be good draftsman and understand auto body building in wood or metal. Address "G. A. R.," care The Hub, 24 Murray street, New York City.

SITUATIONS WANTED.

Wanted—Position by all around carriage, wagon and automobile painter. First-class letterer, striper and finisher. Address "J. C. M.," care The Hub, 24-26 Murray street, New York City.

Wanted—Salesmen; all sections United States with established acquaintance among vehicle and blacksmith trade, to carry our solid rubber tire as side line. Small samples. Good commission. Address "J. J. G.," care The Hub, 24-26 Murray street, New York City.

Wanted—Position as foreman trimmer in factory. Up-to-date, reliable man. Address "Trimmer," care The Hub, 24 Murray street, New York City.

Wanted—Position as superintendent. Twenty years experience as mechanic, foreman, inspector, superintendent and factory manager. Will be open for engagement in near future. Address "Superintendent," care The Hub, 24 Murray street, New York, N. Y.

Wanted—Situation by an experienced carriage painter. Can take charge. Prefer job in Ohio or Kentucky in a country town. W. A. R., care The Hub, 24 Murray street, New York City.

PATENTS.

Patents—H. W. T. Jenner, patent attorney and mechanical expert, 608 F street, Washington, D. C. Established 1883. I make an investigation and report if a patent can be secured and the exact cost. Send for full information. Trade-marks, registered.

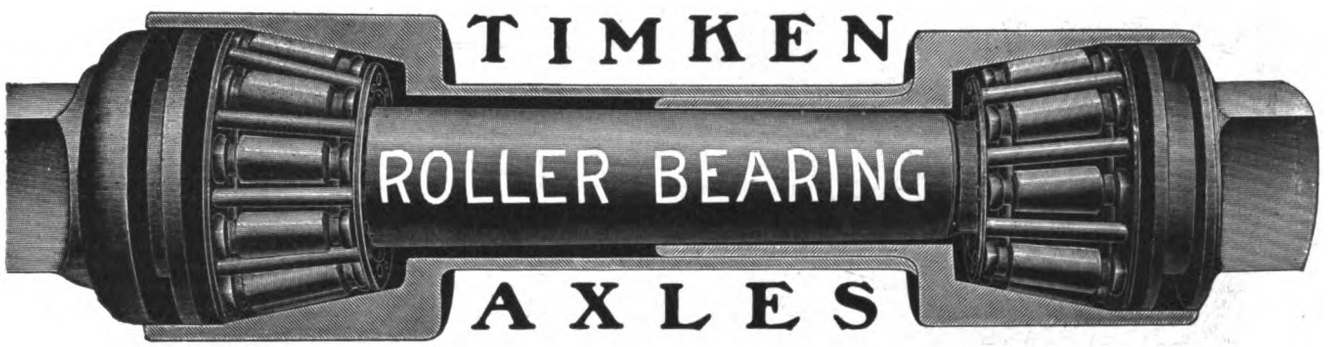
Digitized by Google

Timken Roller Bearing Axles

STAND SUPREME

as the most successful anti-friction axles for wagons and carriages throughout the entire world.

And the reason is due mainly to two factors—the Principles they are Built on and the quality of both Materials and Workmanship that go into their construction.



Timken Roller Bearing Axles

not only reduce the draft anywhere from **25 to 50 per cent.,** but last indefinitely with practically no signs of wear—**requiring oiling** about once a month.

ARE GUARANTEED FOR TWO YEARS

Facts, with catalogs and prices, upon request

The Timken Roller Bearing Axle Co.

CANTON, OHIO

BRANCHES: 10 E. 31st STREET, NEW YORK
429 WABASH AVENUE, CHICAGO

Please mention "The Hub" when you write.

Digitized by Google



A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

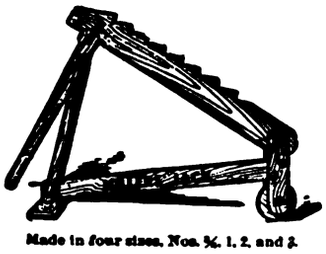
Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.
745 THIRD AVE., BROOKLYN, N. Y.



Made in four sizes, Nos. ½, 1, 2, and 3.

JACKS FOR BUGGIES AND WAGONS

Miller Patent Wagon Jack Made by

J. V. HANKINSON,

Successor to THOS. MILLER,

FRANKLIN, OHIO.

Write for particulars and prices.

INDEX TO ADVERTISEMENTS.

American Roller Bearing Fifth Wheel Co..... 12
American Wood Block Co.....3d cover

Barnes & Co., W. F. & John..... 12
Bentel & Margedant Co..... 6
Bertram & Lamoreaux..... 20
Bradley & Son, C. C..... 21
Buggy Car Co..... 15

Central Bureau of Engraving..... 14
Columbus Bolt Works.....4th cover
Consolidated Rubber Tire Co..... 3
Cortland Forging Co..... 2
Crane & MacMahon.....2d cover

Dalzell Axle Co..... 22
Defiance Machine Works..... 15
Devoe, F. W., & Raynolds Co., C. T.....3d cover

Eccles Co., Richard..... 16
English & Mersick Co., The..... 4

Fitch Gear Co..... 21
Fairfield Rubber Co..... 15

Gerhab, Jacob 15
Gifford & Son, John A..... 13
Goodrich Co., B. F., The..... 17
Goodyear Tire and Rubber Co..... 5

Halsey & Smith..... 19
Hankinson, J. V..... 12
Harland & Son, Wm..... 1
Hoopes Bro. & Darlington, Inc.....2d cover
Howell & Co., T. P..... —

Indianapolis Bolster Spring Co..... 20

Jones & Co., Phineas..... 13

Keystone Forging Co.....13
Kokomo Rubber Co.....4th cover
Koller & Co., J. B.....16

Landsman Motor Co..... 14

Masury & Son, John W..... 2
McKinnon Dash Co..... 4th cover
Miller Bros. 16

National Spring and Wire Co..... 20

Palm, Fechteler & Co.....2d cover
Porter, H. K..... 20

Russell, Burdsall & Ward Bolt and Nut Co..... 22

Schubert Gear Co., August..... 16
Sheldon Axle Co..... 21
Smith & Co., Edw..... 4
Spring Perch Co..... 13
Standard Oil Cloth Co..... 2
Stein Double Cushion Tire Co..... 5
Studebaker Bros. Mfg. Co..... 14

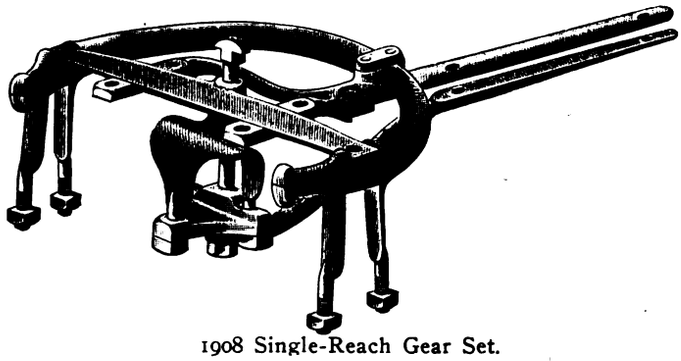
Timken Roller Bearing Axle Co..... 11
Tucker Wood Work Co..... 18

Valentine & Company..... 4

West Tire Setter Co.....3d cover
White, H. F..... 20
Wiesse & Co., Wm..... 20
Wilcox Mfg. Co., D..... 13
Willey Co., C. A..... 6
Woodman, Joel H..... 21

Digitized by Google

FIFTH WHEELS—FORGINGS



1908 Single-Reach Gear Set.



Detachable Fork Perch Connection Used in 1908 Gear Set.

Greatest Line on Earth

WHEN ORDERING GEAR SETS BE SURE TO GET THE GENUINE

Wilcox Rear King-Bolt Gear Sets

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MANUFACTURING CO.

MECHANICSBURG, PENNSYLVANIA

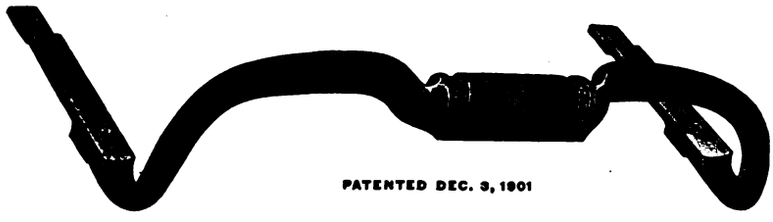
JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

Jones Wheels

BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.



PATENTED DEC. 3, 1901

THE STANDARD BODY LOOI

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the marke
For further information, address

The KEYSTONE FORGING CO., Northumberland Pa

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges
EXCLUSIVELY FIRST-CLASS WORK
THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

Digitized by Google

LARGEST VEHICLE FACTORY IN THE WORLD

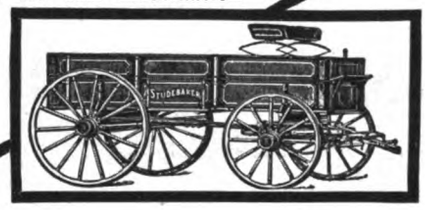
Studebaker

THE STUDEBAKER PLANT COVERS 101 ACRES

There is Real Value In Every Studebaker Wagon

Examine a ***Studebaker*** wagon point by point. Analyze it carefully. You'll find no weak points. Every part is built for ***service.*** It's strongly built and perfectly proportioned. The parts of a 3½ inch ***Studebaker*** bear the same proportion to each other as do the parts of a 3¼ inch wagon. We never make a 3½ inch wagon out of a 3¼ inch wagon by putting heavier wheels on it. The ***Studebaker*** is the best built wagon, the best wearing wagon, the best known wagon and the easiest wagon to sell.

If you are located in one of the few localities where we have no regular selling agency write us at once for full information regarding our selling plan and for catalogues.



Studebaker
South Bend
Indiana

Build Your Own Auto

A GASOLINE ENGINE TO FIT ANY BUGGY or WAGON

LANDSMAN MOTOR CO.
908 Hickory St. ST. LOUIS, MO.
Write for Catalogue.

MANUFACTURERS

DESIRING FIRST-CLASS ILLUSTRATIONS OF THEIR PRODUCT, AT REASONABLE PRICES, SHOULD PERMIT US TO SUBMIT AN ESTIMATE.

Central Bureau of Engraving
COMMERCIAL ENGRAVERS
157-159 WILLIAM STREET, NEW YORK

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

Axles, Etc.
Dalzell Axle Co., South Egremont, Mass.
Sheldon Axle Co., Wilkes-Barre, Pa.
Sparks-With ington Co., The, Jackson, Mich.
Timken Roller Bearing Axle Co., Canton, Ohio.

Bodies, Seats, Etc.
Woodman, Joel H., Hoboken, New Jersy.

Bodies in the White.
Miller Bros., Amesbury, Mass.
Schubert Bros. Gear Co., Oneida, N. Y.

Bolts and Nuts.
Columbus Bolt Works, Columbus, Ohio.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

Carriage Cloths.
Wiese & Co., Wm., New York City.

Carriage Forgings.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

Carriage Hardware.
Gifford & Son, John A., New York.

Carriage Goods.
English & Mersick Co., New Haven, Conn.
Fairfield Rubber Co., Fairfield, Conn.
Gifford & Son, John A., New York.

Dashes, Fenders, Rails, Etc.
McKinnon Dash Co., Buffalo, N. Y.

Engraving.
Central Bureau of Engraving, New York City.

Fifth Wheels.
American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

Finished Vehicles.
Studebaker Bros. Mfg. Co., South Bend, Ind.

Hubs.
American Wood Block Co., The, Delphos, Ohio.
Koller & Co., J. B., Mechanicsburg, Pa.

Jacks.
Hankinson, J. V., Franklin, O.

Lamps.
Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

Leather.
Howell & Co., T. P., Newark, N. J.

Machinery and Tools.
Barnes Co., W. F. & John, Rockford, Ill.
Bentel & Margedant Co., Hamilton, Ohio.
Defiance Machine Works, Defiance, Ohio.
G.-L. Economizer Co., The, New York.
Maxwell & Fitch Co., The, Rome, N. Y.
Porter, H. K., Everett, Mass.
West Tire Setter Co., Rochester, N. Y.

Miscellaneous.
Bertram & Lamoreoux, Detroit, Mich.
Standard Oil Cloth Co., New York.

Ornaments.
Palm, Fechteler & Co., New York, N. Y.

Rubber Tires.
Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, O.
Goodyear Tire and Rubber Co., Akron, O.
Kokomo Rubber Co., Kokomo, Ind.
Stein Double Cushion Tire Co., Akron, O.

Shaft Couplings and Anti-Rattlers.
Bradley & Son, C. C., Syracuse, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Metal Stamping Co., New York City.

Springs and Gears.
Cooper, J. A. & D. P., Struthers, O.
Fitch Gear Co., Rome, N. Y.
Indianapolis Bolster Spring Co., Indianapolis, Ind.
National Spring and Wire Co., Albion, Mich.
Schubert Bros. Gear Co., Oneida, N. Y.
Spring Perch Co., Bridgeport, Conn.

Spokes.
Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.
Koller & Co., J. B., Mechanicsburg, Pa.

Trimming Materials.
Stevens & Sackett Co., New Haven, Conn.

Varnishes, Paints and Japans.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Harland & Son, Wm., London and New York.
Masury & Son, John W., New York and Chicago.
Pierce Co., F. O., N. Y. City.
Smith & Co., Edw., N. Y. City.
Standard Varnish Works, New York City.
Valentine & Co., New York, Chicago, Boston, Paris.
Willey Co., C. A., Hunter's Point, New York City.

White Lead.
Eagle White Lead Co., Cincinnati, Ohio.

Wheels.
Crane & MacMahon, New York.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.

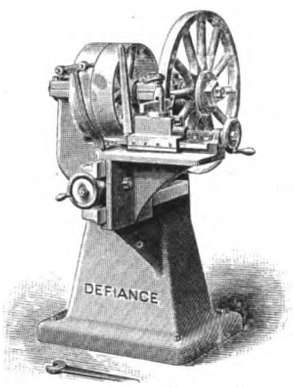
Wheel Stock, Bent Wood, Etc.
Crane & MacMahon, New York.
Koller & Co., J. B., Mechanicsburg, Pa.
Tucker Wood Work Co., Sidney, Ohio.

Digitized by Google

"DEFIANCE" WOODWORKING MACHINERY

For Making

Automobile Wheels, Wagon, Carriage and Artillery Wheels, Rims, Shafts, Poles, Neckyokes, Singletrees, Hoops, Handles, Insulator Pins, Spools, Bobbins, Oval Wood Dishes and General Woodwork. -:- -:- -:- -:- -:-

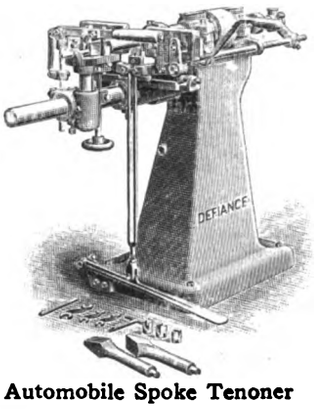


Automobile Wheel Sizer

INVENTED AND BUILT BY

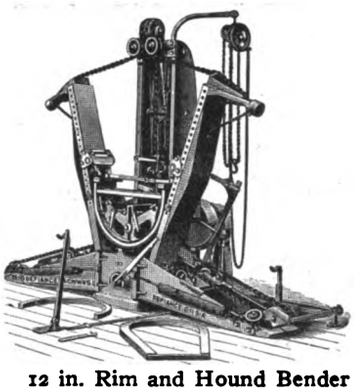
THE DEFIANCE MACHINE WORKS

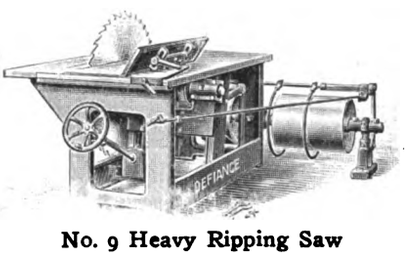
DEFIANCE, OHIO



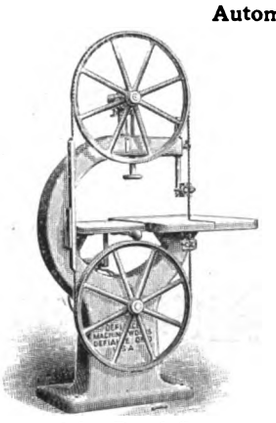
Automobile Spoke Tenoner

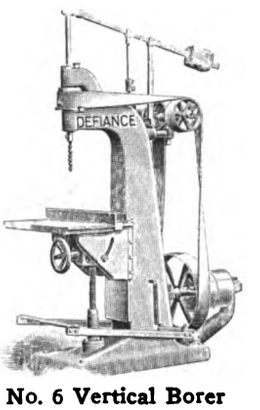
LONDON OFFICE:
71 Queen Street, E. C.


12 in. Rim and Hound Bender



No. 9 Heavy Ripping Saw


28 in. Band Saw



No. 6 Vertical Borer

The Fairfield Rubber Co.

Manufacturers of Carriage Cloth, Imitation Leather, etc. For Automobiles and Carriages

Fairfield - - - Connecticut

Headquarters for "The H. D. Smith & Co.'s" Carriage and Wagon Forgings

JACOB GERHAB

DEALER IN

Carriage Cloths, Leathers and Trimmings, Wagon and Cart Material

Salable prices and all information cheerfully furnished

158, 160, 162 and 164 North Third Street
PHILADELPHIA, PA.

The most power to the weight car of any of this type now on the market.

SIMPLE, DURABLE AND RELIABLE

Four years of success. Write for catalog and prices



THE BUGGYCAR CO.

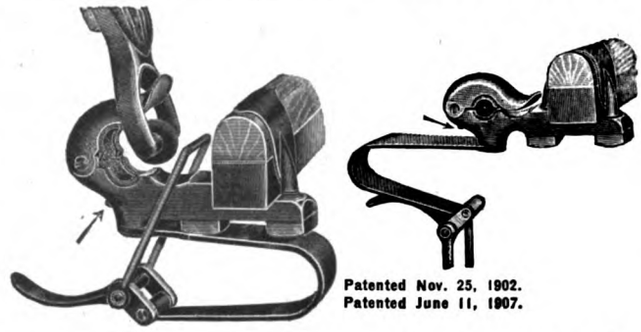
ARMORY AND JOHN STREETS
CINCINNATI :: :: :: :: OHIO

Digitized by Google

Eccles Ball Bearing Couplings

ALL OUR COUPLINGS ARE SHIPPED OUT WITH TWO PIECE BUSHINGS, FASTENED IN THE COUPLINGS

WHEN BUSHINGS ARE WORN OUT BY LONG USE, THEY CAN BE INSTANTLY REPLACED AND FASTENED INTO THE SOCKET BY OUR SPECIAL PROCESS



Patented Nov. 25, 1902.
Patented June 11, 1907.

THE SPRING IS PIVOTED AT THE FRONT SO THAT IT CAN BE TURNED OUT OF THE WAY OF THE WRENCH WHILE CLIPPING COUPLING TO THE AXLE.

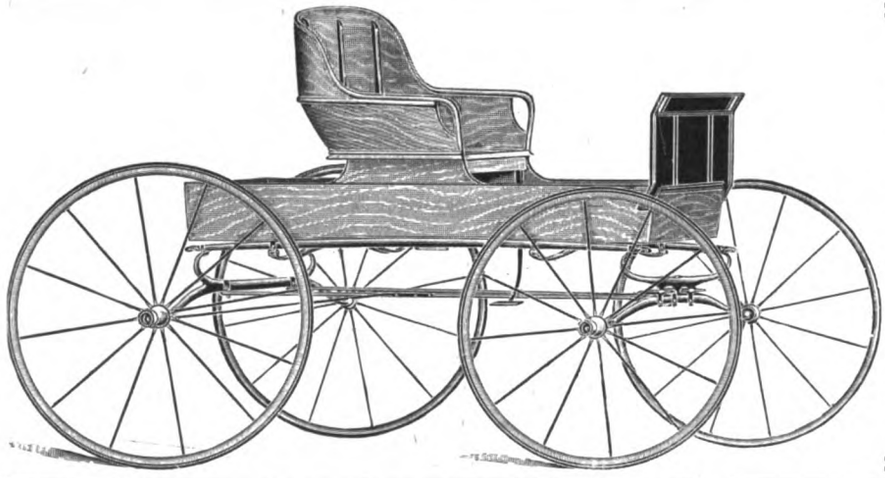
No Lost Bushings when you Use Our Couplings

We Make a Full Line of Carriage and Wagon Forgings

RICHARD ECCLES COMPANY

Catalogue No. 15 is our latest

AUBURN, NEW YORK



No. 215

SIDE BAR ROAD WAGON

ATTRACTIVE, ROOMY and POPULAR

One of our thirty styles that enjoy the call of live builders. Have you seen the latest in cutunders? If interested, see us.

We also build forty different types of gears and make a specialty of tops and trimmings.

WORK-IN-THE-WHITE

Would you like our catalogue?

AUGUST SCHUBERT GEAR CO.

ONEIDA, N. Y.

J. B. Koller & Company

Manufacturers of all kinds and sizes of

Finished Spokes and Bent Rims

Also all kinds of

SLEIGH, SLED AND BOB SLED RUNNERS

MECHANICSBURG, PA.

MILLER BROTHERS

Builders of

CARRIAGES

IN THE WHITE

AND

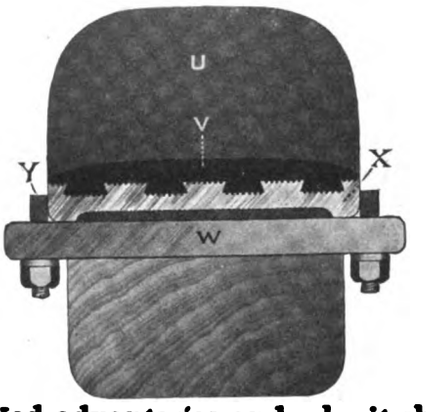
Automobile Bodies

AMESBURY, MASS.

Please mention "The Hub" when you write.

Digitized by Google

The Goodrich "WIRELESS" Motor Truck Tire



Wherein it possesses marked advantages and why it should appeal favorably to every user of Motor Trucks.

The tire consists of three factors: A special steel base (X) with dove-tailed grooves on the top surface; a hard rubber sub-base (V) which is inseparably united with the steel base; and a soft rubber tread (U) or tire proper, inseparably vulcanized upon the hard rubber sub-base. The tire is held in place on the felloe-band (W) by means of lugs (Y) on either side of the steel base, and a key on the felloe band which fits into a key seat on the steel base of the tire, and prevents circumferential movement. Thus the fastening point of the "Wireless" tire is steel to steel and absolutely secure.

ADVANTAGES:

The Goodrich "Wireless" tire affords the following advantages over all other type of motor truck tires:

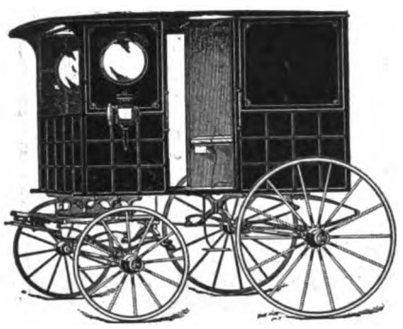
(1) **Increased mileage,** because it affords a maximum external abrasion without affecting its fastening to the wheel.
(2) **Decreased cost per mile,** because it will give more mileage in proportion to its cost than any other rubber truck tire.
(3) **Freedom from repairs,** because the component factors form an inseparable unit and thus eliminate the usual hinging action of the rubber over internal metal fastenings.
(4) **Simpler method of applying,** because no complicated machine is necessary. This can be quickly and easily done with simple tools which we furnish.
(5) **Better service from the dual type,** because of decreased width of tread over all, affording maximum contact with road surface, and more perfect distribution of weight upon the spokes.
(6) **Adaptability to standard wheel sizes,** because the Goodrich "Wireless" tire may be applied to any wheel at present made for solid rubber motor truck tires.

Information regarding sizes, prices, discounts, etc., upon application.

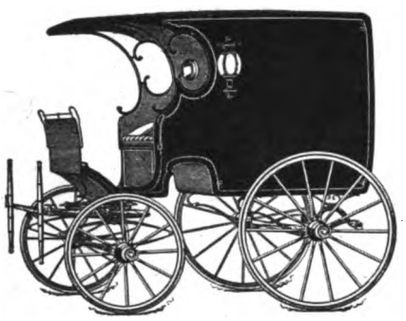
The B. F. Goodrich Company
Akron, Ohio

BRANCHES IN ALL LARGE CITIES.

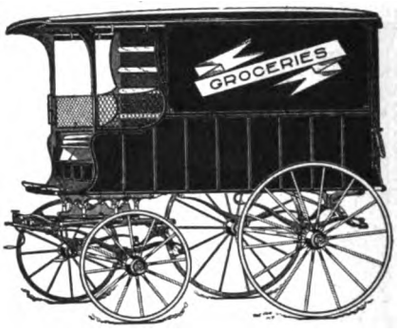
Digitized by Google



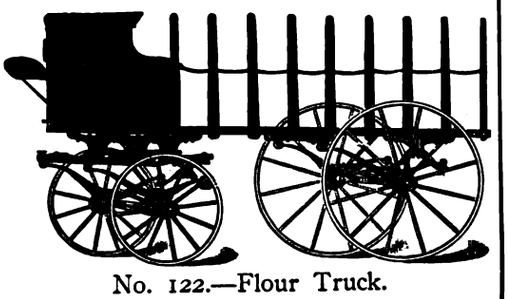
No. 112.—Milk Wagon.



No. 111.—Altman Wagon.



No. 113.—Grocery Wagon.



No. 122.—Flour Truck.

Electrotypes

of the vehicles presented on this page will be forwarded on receipt of

75 cts.

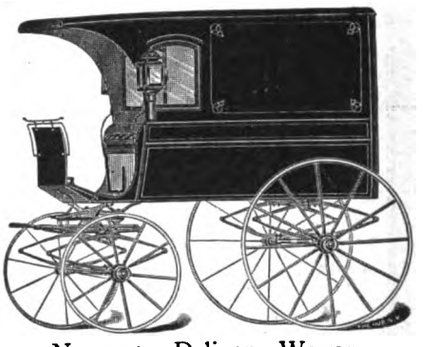
for each cut, to any address. Postage prepaid.

Catalogue

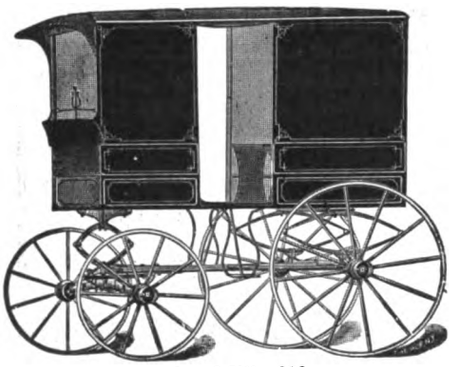
containing nearly 200 illustrations of carriages, wagons, sleighs, and miscellaneous cuts will be sent upon application.

Trade News Publishing Co.

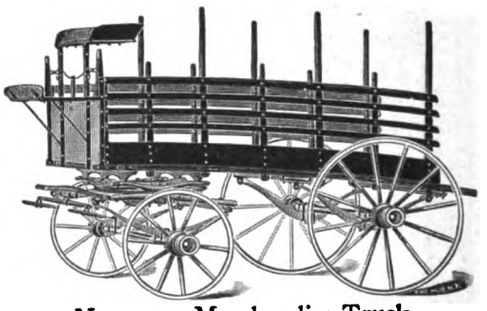
24-26 MURRAY ST.
NEW YORK



No. 115.—Delivery Wagon.



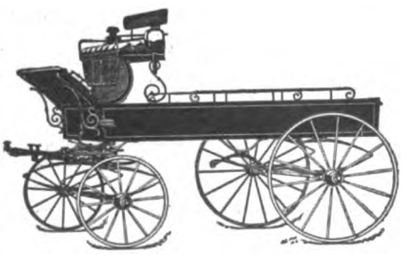
No. 116.—Milk Wagon.



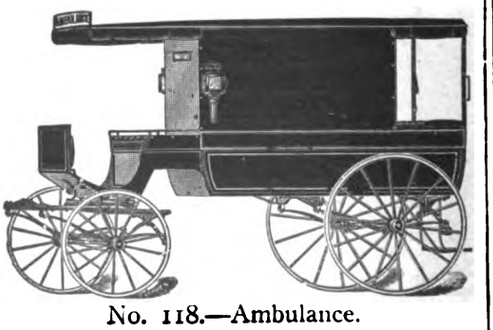
No. 117.—Merchandise Truck.



No. 114.—Delivery Wagon.



No. 124.—Delivery Wagon.



No. 118.—Ambulance.

Digitized by Google

OAK LEAF BRAND

PATENT
AND
ENAMELED
LEATHER
FOR THE
CARRIAGE
AND
AUTOMOBILE
TRADE

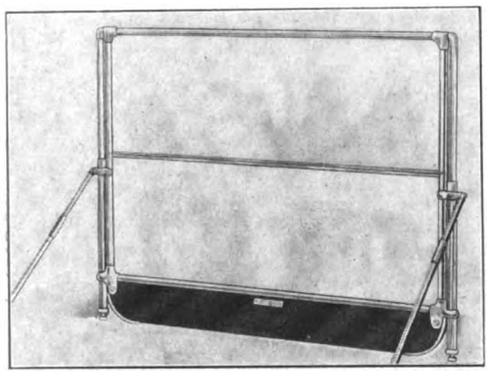
SAMPLES AND QUOTATIONS
FOR THE ASKING

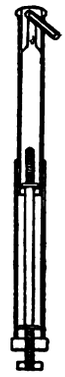
J·H·HALSEY & SMITH LTD
NEWARK, N. J., U.S.A.

HARNESS CURLEY

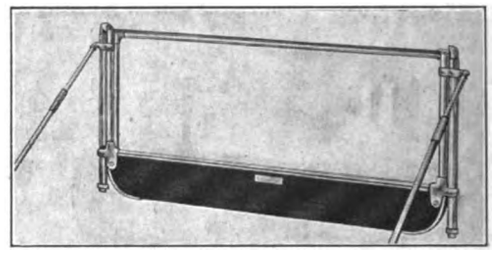
Digitized by Google

WILL NOT RATTLE—TELESCOPE WIND SHIELD





Try one and be convinced. Get a Wind Shield that is all we claim for it—absolutely the best on the market; one for which you need never make an apology; one that is not only a Wind Shield but an improvement to any car.





BURTRAM & LAMOREAUX,

72 Fort Street East, Detroit, Mich.

Our Carriage or Spring Edge Cushion Frame



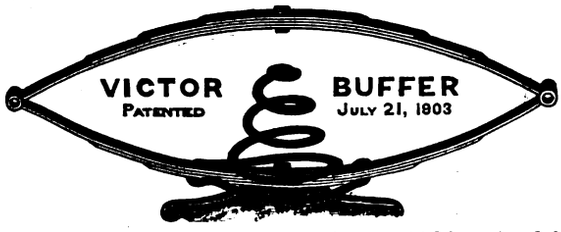
Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.

NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

For Weak or Overloaded Springs.

VICTOR STEEL SPRING BUFFERS

Save wagon, prevent breakdowns, and add materially to the carrying capacity. If your dealer does not have them write to us direct.

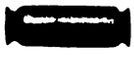


Made in Four Sizes: 0, 1 1-4 in. spring & under; 1, 1-4 in. to 1 1-2 in. spring; 2, 1 1-2 in. to 2 in. spring; 3, 2 in. to 2 in. spring.

Carrying capacity of each spring: No. 0, 400 lbs.; 1, 750 lbs.; 2, 1000 lbs.; 3, 1250 lbs.

Manuf'd by INDIANAPOLIS BOLSTER SPRING CO.
INDIANAPOLIS, INDIANA.

BRAZING SLEEVES



For Putting on Rubber Tires.
No Filing or Scarfing.



LINED UNLINED

F. WHITE, 111 E. Pearl St., Cincinnati, O.

HEADQUARTERS FOR CARRIAGE BUILDERS.

Let us offer you the most delightful hotel accommodation at moderate cost.

HOTEL EMPIRE

B'way 63d St.

NEW YORK CITY



In the centre of everything worth while

Restaurant noted for its excellent cooking, efficient service and moderate prices

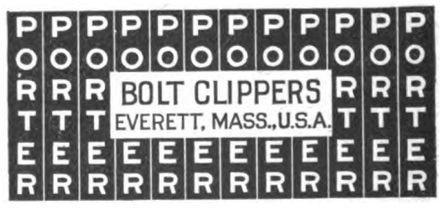
Rooms (use of bath)..$1.50
Rooms (with bath)... 2.00
Suites (with bath).... 3.50

FIVE MINUTES WALK TO SHOPPING AND AMUSEMENT CENTRES

All Street Cars—One Minute to "L" and Subway

Send for Guide of New York, Free

W. JOHNSON QUINN, Prop.



WM. WIESE
With Hardt, Von Bernuth & Co.
Since 1883.

WM. WIESE & CO.

ALBERT MAERTENS
With Hardt, Von Bernuth & Co.
Since 1894.

Formerly Carriage Goods Department of HARDT, VON BERNUTH & CO.

Carriage and Automobile Linings and Livery Cloths

Sole Agents in the United States for
WULFING'S CARRIAGE CLOTH AND EL DE BARAN GOATSKIN.

66-68 Greene St., New York

Please mention "The Hub" when you write.

Digitized by Google

THE BRADLEY SHAFT COUPLING



OPEN

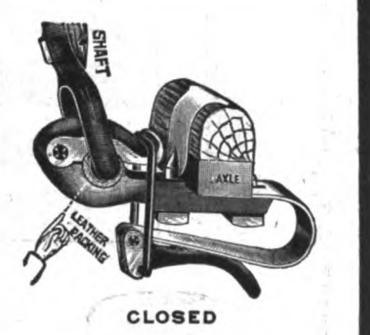
Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1½ in. in section.

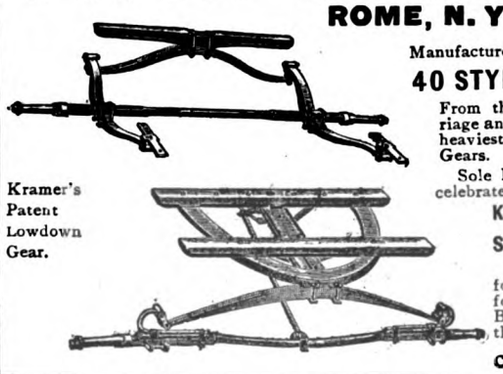
C. C. BRADLEY & SON, Syracuse, N. Y.



CLOSED

FITCH GEAR CO.

ROME, N. Y., U. S. A.


Kramer's Patent Lowdown Gear.

Manufacturers of over

40 STYLES of GEARS

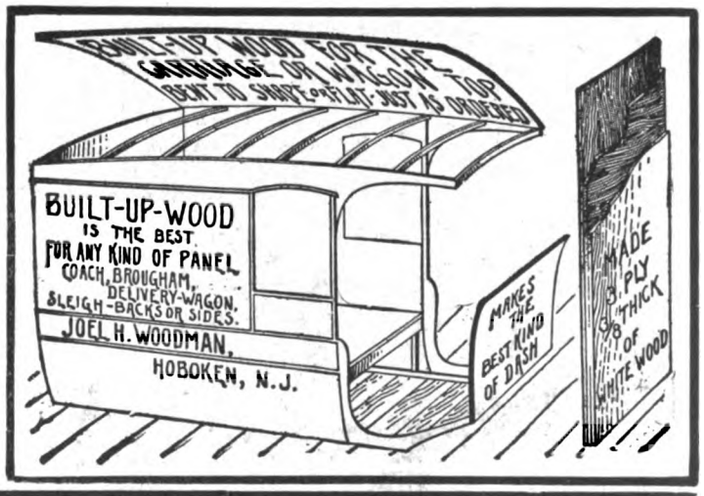
From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.

Sole Manufacturers of the celebrated

Kramer Lowdown Short Turn Gear

It is the Finest Gear for Drop Centre-Body for Milk, Bakers' or Butchers' Wagons on the market.

Send for our No. 22 Catalogue, just out.



Axles

A complete line of Wagon and Carriage Axles—Common, Concord, Farm Wagon, Half Patent, Long Distance, Collinge and Mail Patent. Empire Ball Bearing Axles. Made only by

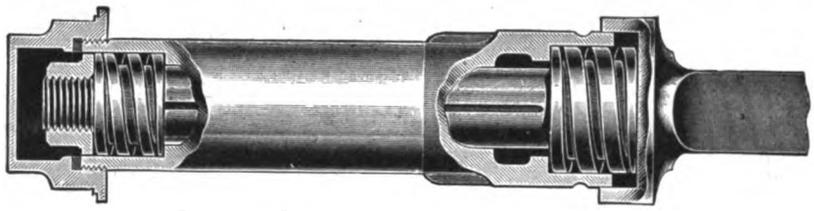
SHELDON AXLE COMPANY, Wilkes-Barre, Pa.

The Best and Easiest Riding Springs, for both Light and Heavy Vehicles. We have had very great success with our Automobile Springs : : : : : :

Springs

Digitized by Google

PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

DALZELL AXLE CO., South Egremont, Mass.



BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.

SOLID BENDINGS



MAKE FAULTLESS SEATS

CATALOG "H" SHOWS SIZES

WRITE FOR IT

THE TUCKER WOODWORK CO. SIDNEY, OHIO.

HOTEL CUMBERLAND

NEW YORK

Southwest Cor. Broadway at Fifty-fourth St.

Near 50th St. Subway and 53d St. Elevated Stations and accessible to all surface lines.



Headquarters for Carriage and Automobile Trade

Ideal Location, Near Theatres, Shops and Central Park.

NEW AND FIREPROOF

STRICTLY FIRST-CLASS

All Outside Rooms. No Carpets. All Hardwood Floors and Oriental Rugs.

Ten Minutes Walk to Twenty Theatres.

Transient Rates, **$2.50** with Bath, and up.

Restaurant Unexcelled. Prices Reasonable.

SEND FOR BOOKLET.

HARRY P. STIMSON, *Formerly with Hotel Imperial.*

R. J. BINGHAM, *Formerly with Hotel Woodward.*

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

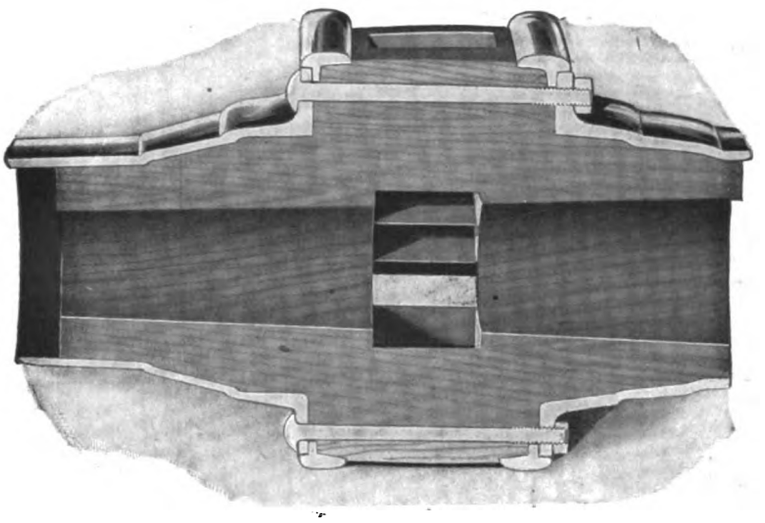
Manufacturers of

F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES } **C. T. RAYNOLDS & CO'S** { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES }

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

The American Wood Block Co., Delphos, O.



SECTIONAL VIEW.

Hub Blocks

Green—Air and Kiln Dried. Sold by grade or timber run. Compressed blocks or otherwise. 3 in. to 12 in. diameter. Stock kept up to standard quality and ready for shipment at all times.

GILLETTE'S

"IDEAL" HUB

It Stands the Racket

The **IDEAL** hub makes the strongest wheel. Repairs are less than on any other style; actual use has proven these facts.

IDEAL is metal protected, wood to wood center, means elasticity; simplicity of construction, easily and quickly repaired, driven spokes best of all, no metal to corrode.

IDEAL has the patented inverted flange that prevents lateral strain.

IDEAL means less tire resetting.

Try it—it is guaranteed.

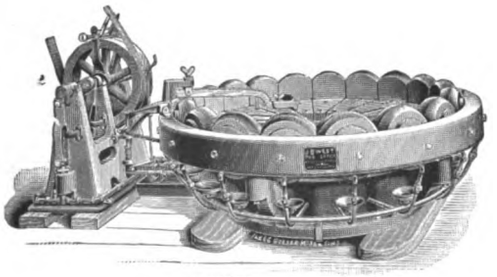
We want the wheel makers to use the **IDEAL** in their wheels.

The American Wood Block Co.

DELPHOS, OHIO

HUB BLOCKS **HUBS** **DIMENSION STOCK**

THE FIRST TIRE SETTER

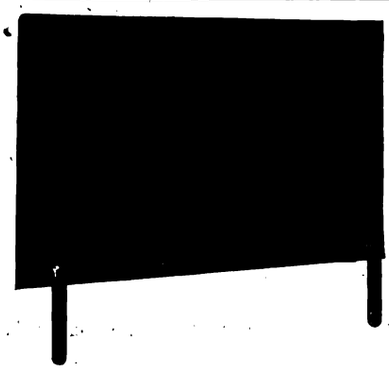


you ever heard of was a "WEST"—probably, for they were on the market several years before any other and you are hearing more about them every year. Many of the older users are loudest in their praise. That's because they stand the test of time—they're made that way. Some of our Hydraulic machines have been **in use fourteen years** and are doing as good work now as when first installed. **Now**, we don't claim our machines are best simply because they have been longest on the market, **but because** we have been making a study of cold tire setting all these years and improving our machines as experience and observation taught us, and when you buy a **"West Hydraulic"** you get the benefit of this experience. Some people knowing our machines would set tires cold satisfactorily, thought some other would do as well—and the price was cheap—also machine. Now they wish they had bought a **"West Hydraulic."** **If you make a similar mistake it's your own fault.**

Buy a **"West Hydraulic"** and be happy. Hand or Power machines.

THE WEST TIRE SETTER COMPANY, Rochester, N. Y.

Digitized by Google



No. 140 Solid Foot

OUR No. 140 DASH

SOLID FOOT OR ADJUSTABLE
WITH SOLID WELDED RAISED RAIL

Japanned or Nickel Plated

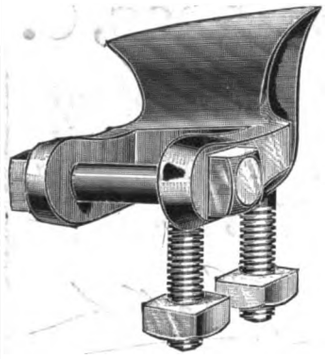
IS A GOOD SELLER

McKINNON DASH COMPANY

Cincinnati, O.
Troy, O.

Buffalo, N. Y.

St. Catharines
Ontario



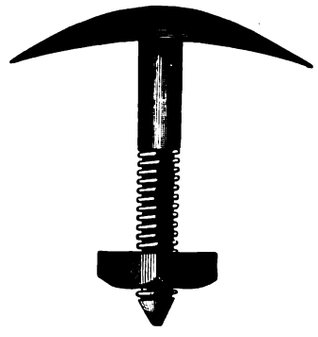
Skewed Shaft Couplings

Regular or Oval Patterns,
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips ⅝ or ¾ width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

1908 Catalog "H" on application.

COLUMBUS BOLT WORKS, Columbus, O.



Kokomo Solid Rubber Tires

¶ In rubber substance the Kokomo Solid Rubber Vehicle Tire is truly **SOLID.**

¶ Solid with the pure stock that has made them an exception to the ordinary tires of commerce.

¶ In Kokomo quality there is an established standard that is recognized as the highest ideal of tire construction. The Kokomo is a standard tire in every respect.

¶ Kokomo Tires always score in the running, and the longer the test the more convincing the results.

Kokomo Rubber Company

Kokomo, Indiana, U. S. A.

Digitized by Google

The Hub



From all over the country come reports of increasing activity in the carriage and auto building lines. A noticeable feature is the activity in shop equipment and enlargement of plants.

Now that a speedy solution of the tariff question is assured, and lower prices for steel have been announced, an early approach to normal conditions can be looked for.

Oldest Carriage Journal in the World

1858 1909

CURLEY N.Y.

Vol. L. No. 12 MARCH, 1909

Digitized by Google

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS



DECALCOMANIE



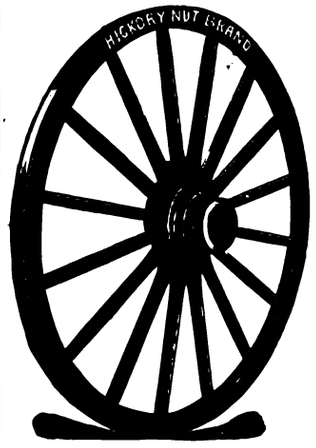
TRANSFERS FOR ALL PURPOSES

Scrolls, Figures, Flowers, Letters, Animals, Stripings, Numerals, Corners, etc. ¶ Special Name Plates of all descriptions. Buggy Ornaments in sets.
Beautiful Scroll Effects for ceiling work in Limousine bodies; also a large and attractive line of **Plaid Designs** for panels in automobiles. Every live maufacturer should look up this proposition. Nothing is more effective in body embellishment. **Cane Work** Cane Work Transfers are also a big specialty with us. Name your wants and let us talk with you. New catalogue will soon be ready and will be sent with cash orders of $1.00 or more. No paint shop is complete without our catalogue. -:- -:- -:-

Palm, Fechteler & Company

67 Fifth Avenue, New York

Chicago **St. Louis** **Montreal** **Toronto**



CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

ESTABLISHED IN 1791

Wm. Harland & Son

Beg to announce that they have removed their United States Headquarters to Genesee Street and Erie Canal, Buffalo, N. Y.

Wm. Harland & Son

IMPORTERS OF

Harland's English Varnishes

FOR

Coach and Automobile Builders, Railway and Street Car Finishing

AND MANUFACTURERS OF

High Grade Varnishes for all Purposes

FACTORIES:

MERTON, LONDON, S. W., ENGLAND.

GENESEE STREET and ERIE CANAL, BUFFALO, N. Y.

400 EASTERN AVENUE, TORONTO, ONTARIO.

Western Branch, 40 Dearborn Street, Chicago. C. H. Schooley, Manager.

General Manager United States and Canada, H. Hagger.

Please mention "The Hub" when you write.

Digitized by Google

JOHN W. MASURY & SON

MANUFACTURERS OF

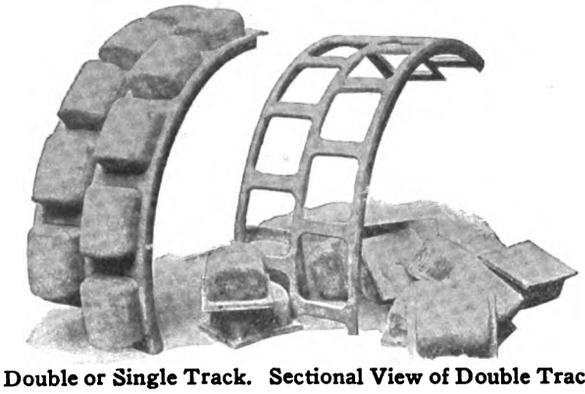
Superfine Coach Colors and Varnishes

NEW YORK——AND——CHICAGO

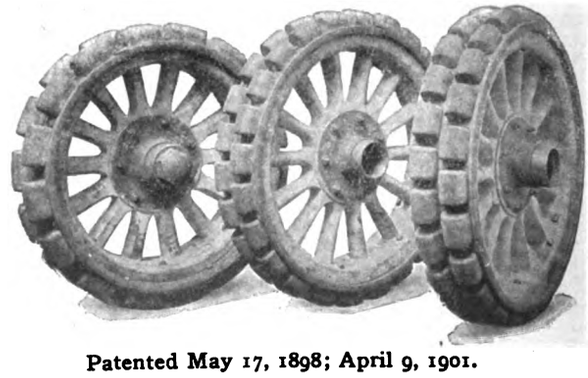
SOLVED!

Is the way the motor car experts express themselves on the subject of tires for commercial motor vehicles after seeing and using the :: :: :: :: :: ::

KELLY-SPRINGFIELD SECTIONAL TIRE



Double or Single Track. Sectional View of Double Track.



Patented May 17, 1898; April 9, 1901.

With a grip on the road that means progress and security from the fault of solid tires—that of crowding the rubber ahead under load, which means disintegration—the motor wagon and truck owner will find in the Kelly-Springfield Sectional Tires the best tire for all heavy cars. Each section is dependent upon itself. If interested, write :: :: :: ::

CONSOLIDATED RUBBER TIRE COMPANY

NEW YORK, N. Y.—and—AKRON, OHIO

Branches:

BOSTON CHICAGO PHILADELPHIA ST. LOUIS DETROIT CINCINNATI SAN FRANCISCO

Digitized by Google

Right Varnish Makes Satisfactory Vehicles

Carriages, buggies and other vehicles that satisfy must not only be well made, they must also be **well varnished.** Your reputation and your profits depend upon the varnish you use. You can make no mistake by using

Standard Varnish Works' Varnishes

They are the standard of excellence because they represent a

Unity of Color, Lustre, Working, Drying and Wearing Properties

Of those not using these varnishes we ask for an opportunity to prove the validity of our claims

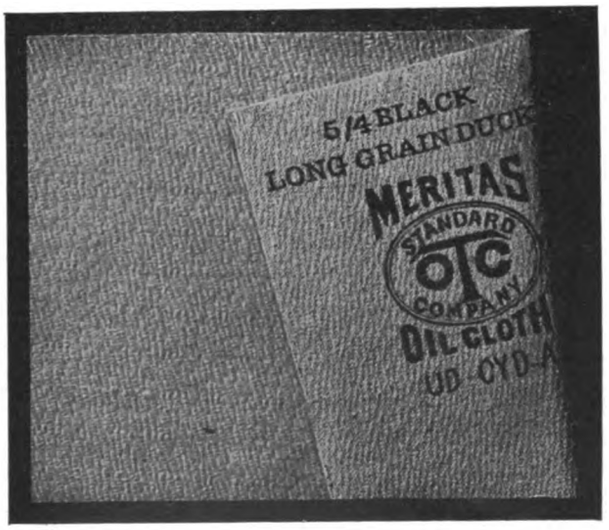
STANDARD VARNISH WORKS

CHICAGO NEW YORK LONDON BERLIN BRUSSELS

INTERNATIONAL VARNISH COMPANY, Ltd., Toronto

MERITAS

CARRIAGE ENAMELED OIL CLOTH



If MERITAS peeled or scaled we couldn't keep on guaranteeing it. Look on the back of the goods. The MERITAS trade-mark there means **Guaranteed. At your jobbers.**

Standard Oil Cloth Co.

320 Broadway, NEW YORK.

WE MAKE THE PRICE



WE MAKE THE QUALITY

PARRY BUGGIES

The vast improvement in '09 Parry work is the result of over twenty-five years' experience and a careful study of the dealers' requirements. The sales thus far are proving that the Parry idea of how a vehicle should be constructed conforms with the views of dealers everywhere.

Have YOU investigated this '09 line?

Write to-day for Catalogue.

PARRY MFG. CO.

INDIANAPOLIS, IND.

Please mention "The Hub" when you write.

Digitized by Google

AGAIN

Grand Central Palace, New York, Jan. 7, 1909
Madison Square Garden, New York, Jan. 23, 1909
Chicago Automobile Show, Chicago, Feb. 6, 1909

215

Exhibitors in all, of which

172, or 80 per cent.,

finished with

VALENTINES VARNISH

VALENTINE & COMPANY

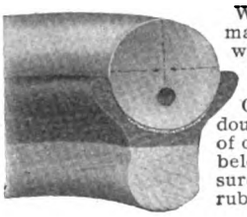
New York Chicago Boston Toronto Paris Amsterdam

Valentine's Coach Colors are Standard

Are Your Tires on Right?

They Are if They Are Goodyears

The Goodyear Eccentric Cavity Cushion Tire is *the tire with canvas guides.* These guides insure the correct applying of the tire, with the wire running evenly *below* center, where it should be. Without this guide a tire may be applied "on a twist."



Without this guide a tire may be applied with the wire cavity up or right under the tread. You run no risk with the Goodyear. It has almost double the wearing depth of others owing to its hole below center. The pressure does not crack the rubber around the wire.

The Goodyear Wing Tire keeps out all grit and water which get under the ordinary tire and "sandpaper" or rot them out. All these tires are made of *new* rubber quoted at $1.00 a pound. We *could* use "Guayule" or "Lapori" at 35 cents or "reclaimed" rubber at 10c, but it won't do for Goodyear



The Goodyear Sidewire Tire (conical or corrugated broad tread) is the only solid tire specially adapted to auto-buggies. Spring steel plates prevent the side wires from getting between tire and channel. An internal reinforcing wire holds the tire even if some unusual side strain should break the outside wires.



Send for sample section. Goodyear Solid Rubber Tires are sold by the length or by the reel. Write today.

GOODYEAR

The Goodyear Tire & Rubber Co., Canal Street, Akron, Ohio

Branches and Agencies:—Boston, 261 Dartmouth St.; Cincinnati, 317 E. Fifth St.; Los Angeles, 932 S Main St.; Philadelphia, Broad and Fairmount Ave.; New York, 64th St. and Broadway; San Francisco, 506 Golden Gate Ave.; Chicago, 80-82 Michigan Ave.; Cleveland, 2005 Euclid Ave.; St. Louis, 3935-3937 Olive St.; Buffalo, 719 Main St.; Detroit, 251 Jefferson Ave.; Pittsburg, 5988 Centre Ave.; Omaha, 2020-22 Farnum St.; Washington, 1026 Connecticut Ave; Atlanta, 90 N. Pryor St.; Louisville, 1049-51 Third St.; New Orleans, 706-16 Barrone St.; Memphis, 181-5 Madison St.; Dallas, 111 N. Akard St.; Denver, 28 W. Colfax Ave.; Kansas City, 16th and McGee Sts.

Studebaker

What Every Dealer Wants

Every dealer handling farm wagons wants to increase his wagon sales and profits.

He wants to handle the wagon that ***is the best seller*** and

If he expects to build up and hold his wagon trade, he must handle a wagon

That will give his trade satisfaction.

The ***Studebaker*** is the best selling wagon on the market.

There is no doubt about that.

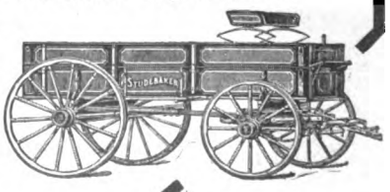
Why?

Because the ***Studebaker*** is unquestionably the best wagon.

Because the ***Studebaker*** is more widely advertised and better known than any other wagon.

And because the ***Studebaker*** is so well and favorably known, it is the easiest wagon to sell.

Write to us at once for full information regarding our selling plan, and for catalogs.

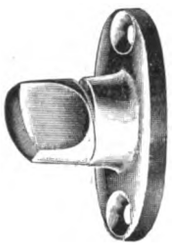


Studebaker Bros. Mfg. Co.
South Bend, Indiana

1A1008

Digitized by Google

Rex Curtain Fasteners



have made good. Our business and our satisfaction in these goods increases daily. They are made on the same sound principles as the old standard Brewster Fasteners (made by us), but without the fine fitting and finish. The strongest and neatest low priced fasteuers on the market to-day. Sample sent on request. Prices are way down.

The English & Mersick Co.

New Haven, Conn.

82 Years' Experience in Every Can

E.S. 1827 &CO. **Edward Smith & Co.**

CARRIAGE VARNISHES

Everything from the
Bare Wood to the Finishing Coat.

CHICAGO **NEW YORK**

HOTEL EARLINGTON

55 WEST 27TH STREET
Near Broadway, NEW YORK

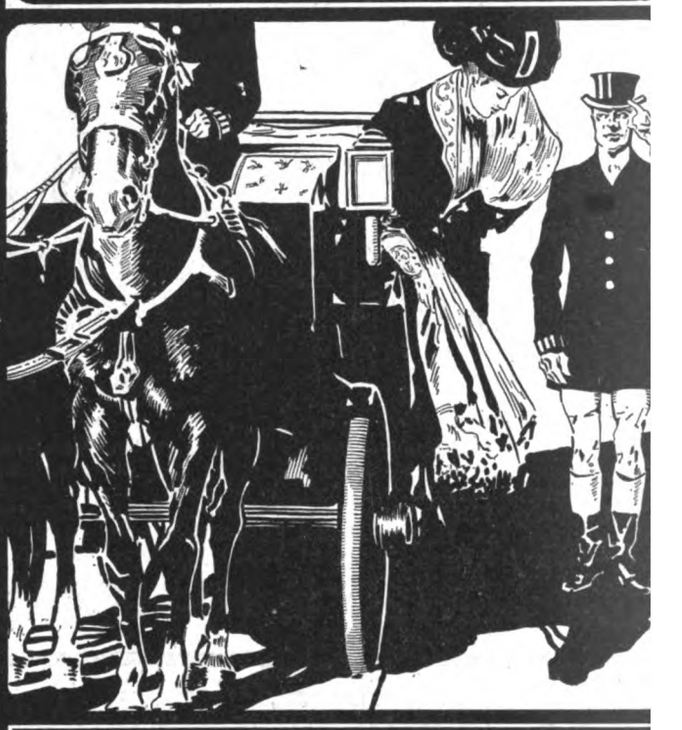
This well known, absolutely fireproof hotel, after being entirely renovated, redecorated and fitted up complete with new plumbing has now reopened.

Rates from $1.00 and Up
With Bath, $5.00 and Up

Special rates by the season or year for permanent guests.
A special feature will be the cuisine, both in the dining room and in the new cafe for ladies and gentlemen. A la Carte and Table d'Hote.
Hotel under the management of

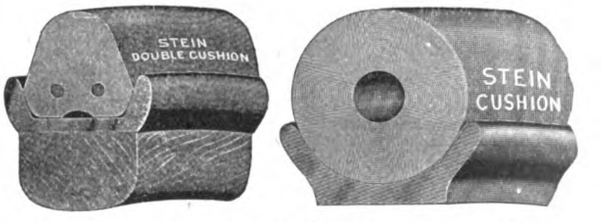
GUERNSEY E. WEBB
Formerly of the Ansonia.

STEIN DOUBLE CUSHION TIRE



EXPERIENCE

is the only true basis on which to figure if you wish to arrive at a fact.



Our story is best illustrated in our product. Be your own judge in deciding the question of tire supremacy.
Pure rubber must naturally be an important factor in a good tire. Rubber quality is only one of the many features that has won recognition for the

STEIN DOUBLE CUSHION TIRES

Be fair with yourself and your patrons. Apply the Stein Double Cushion Tire to your work and win favor with the driving public.

DO IT NOW.

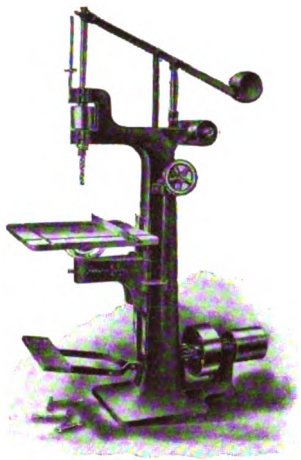
STEIN DOUBLE CUSHION TIRE CO.
AKRON, OHIO

Digitized by Google

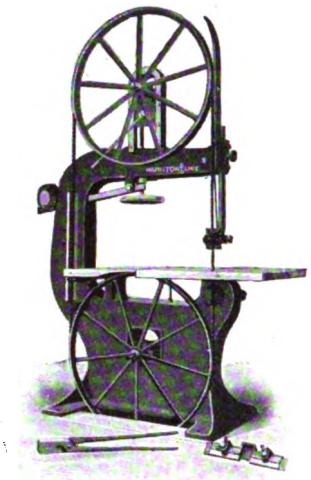
HAMILTON-OHIO LINE WOOD WORKING TOOLS

For Automobile Body and Wheel Work.

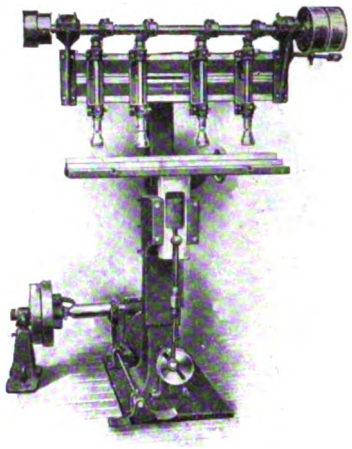
Carriage, Wagon, Hub, Spoke, Rim and Wheel Factories



Hamilton Vertical Boring Machine No. 280.



Hamilton 42-Inch Band Saw No. 325.



Hamilton Multiple Borer No. 601.

Disk Sanders, Belt Sanders, Spoke Sanders, Wheel Sanders, Gear Shapers, Scroll Eyeing Machines, Gear Rounders, Spring-Bar Boring Machines, Seat-Back Benders, Rim Planers, Rim Rounders, Rim Borers, Rim Cut-Off Machines, Wheel Boring & Screw Driving Machines, Spoke Lathes, Spoke Cut-Off Saws, Spoke Tenoning and Mitering Machines, Spoke Throaters, Spoke Facers, Wheel Facers, Wheel Tenoners, Hub Lathes, Hub Mortisers, Hub Borers, Wheel Boxers, Wheel Presses, Tire Truers, Tire Bolters, Spoke Cut-off Machines, Band Saws, Rip and Cross-cut Saws, Planers, Matchers, Moulders, Shapers, Boring Machines, Universal Wood Workers, etc., etc., etc.

THE BENTEL & MARGEDANT CO., Hamilton, Ohio, U. S. A.

C. A. WILLEY COMPANY

Color Grinders

AND MANUFACTURERS OF

SPECIALTIES IN CARRIAGE and CAR PAINTS, COLORS, Etc.

WILLEY'S SUPERFINE SPECIALTIES C COACH R COLORS TRADE MARK

92d St. Cars at Hunter's Point Ferry Pass our Factory.

Hunter's Point, New York City

CALL AND SEE US WHEN IN NEW YORK.

Digitized by Google

The Hub

Copyright, 1909, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. L. NEW YORK, MARCH, 1909. No. 12.

THE TRADE NEWS PUBLISHING CO. OF N. Y.
Publishers of THE HUB

J. H. Wright, *President.* G. A. Tanner, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

Jacob H. Klein, *Technical Editor.*

REPRESENTATIVES:

J. Henry Klunk. J. G. Tanner.

Other Publications of Trade News Publishing Co.:

HARNESS (monthly) .....per year, $1.00
AMERICAN HARNESS AND SADDLERY DIRECTORY (annual) .....per copy, $4.00

The Hub is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of Trade News Publishing Co.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

France.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

Germany.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

England.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

What Is the Use of a Guaranty?

One reason why the guaranty feature appears to meet with a cold-hearted reception among manufacturers of carriages is that the manufacturers do not need any stimulus to do good, honest and square work. Were there no guaranty, the buyer to-day would be just as well and thoroughly protected as he is now.

The users and the dealers cannot understand why they would be as safe without guaranty as with one. They would refuse to believe it if given the strongest possible assurance of good faith. They imagine the builders want to get away from the guaranty in order to take advantage of them with inferior material or workmanship. So they hug the delusion of guaranty and ply resolutions against it in annual conventions. They cannot understand how builders could continue to be honest unless obliged to be.

It is to the interest of builders to do good work without guaranty. Of course there is a percentage of poor work, and always will be. When builders make good for defective parts, they do not do so merely because of their guaranty, but because they want to and because it pays to do so. As matters now stand, builders are supposed to be sending out work which cannot be safely accepted as good work until after it has stood the strain of use for a year. They are supposedly dishonest until it turns out that they were honest.

The guaranty has become an established consideration in the vehicle industry. No manufacturer would dare ignore it. None want to. It would be practically as good a guaranty for the builder to say "I am honest and will give you a square deal" as to cover a page with guaranty details. Any one who has the faith and sand to try it will find out that he will be taken at his word by all who know him.

The Clouds Are Scattering.

Iron and steel have at last reached a just level and prices have generally declined. Stocks in jobbers and retailers' hands are low. An awakening cannot be far off. How soon the tide will turn none can tell. Our new president assures us it will come soon after the near revision of the tariff. Capital is loafing. A thousand enterprises are stretching their legs in pigeon holes, waiting for the opportunity to get out. This is a country of ups and downs, ebbs and flows, over zeal and over caution. The business world has been at school for over a year, and has learned its lesson. An uprising of demand is not a remote possibility. The American people are naturally optimistic. This spirit has been temporarily suppressed. But suppression is unnatural. Our normal condition is intensity of purpose and action. Let us not take too much for granted as to prolonged dullness. The people and the business interests have for years felt that tariff duties have been a source of injustice to them. When that load is lifted they may do what they have so often done in the past, wake up and get busy.

The Commercial Truck.

The observer of city vehicular traffic cannot fail to observe a steady development in size and capacity and power of heavy electrically operated trucks. The impetus is largely due to the success which has attended the building of chassis of every variety. Much of this enterprise has been developed in advance of a market requirement. As things now stand, the responsibility of satisfactory work is taken off the builder, while on the other hand he is able to give a stronger guaranty to his customer. The chassis builder has stepped in and done his work, and in the chassis has produced the largest accessorial part. He has made it possible for the builder to go after business he never before could think of.

The number of heavy commercial trucks, according to recent statistics, is steadily increasing, and they are of larger capacity. Skill in their control and operation is working in their favor. We are shortly promised a stronger type of truck for heavy hauling, as well as a lighter type, of greater efficiency, which will be available as to cost to a much larger number of patrons. Constructional details have been imposed. Accessibility for repairs is more in evidence. Freedom from disturbance of mechanism is more assured.

Digitized by Google

The field for the commercial truck is broad, and it is commending itself more strongly from every point of view.

Establishing Grading.

The vehicle interests have taken hold of the timber problem with a spirit that promises the best possible solution. The proceedings of the meetings held point to united and harmonious action. The clear definitions given to each of the five enumerated grades show where the lines of demarkation between each separate grade can be commercially drawn and removes much cause for dissatisfaction. There is no room for mistaking one grade for another. In times past attempted classifications have run one into the other. At least there is something definite. This result could not have been arrived at but for the keen intelligence of government reports and the ready co-operation of timber users.

Of course all this work is only preparatory. Official sanction has to be given by all interested parties in a few weeks, but there is no doubt but that the work so ably and conscientiously done will be endorsed and made the basis of future dealings and the future preparation of carriage and wagon material for market.

Establishing Cost.

There has been some progress made in recent years in ascertaining cost of carriage and wagon work in our large factories, but, generally speaking, the results for practical purposes have been disappointing. This is not due to indifferences, but to genuine difficulties. There is necessarily more or less guess work, in which elements of cost are reached in the inverse way, by working backward from total cost to the cost of each part of the work. No satisfactory conclusions can ever be reached in this way.

When contractors, from a battleship down to wood shed, start to bid, they begin with the cost of each element entering into construction, and by adding percentages determined by experience they arrive at the total cost. Such a businesslike way ought to be possible in carriage building, but it thus far appears to be unattainable. One reason is that the ratio of the cost of labor to the total cost of the vehicle is so much greater in the case of a vehicle than in the case of a battleship or a wood shed. The problem has been simplified by the fact that the cost of such accessory can be definitely known. And yet when one scrutinizes the best methods of ascertaining cost, we find so many little leaks that we feel our conclusions, while theoretically right, are not safe for counting room estimates.

The larger factories, however, have devised and are using approximating purposes which practically serve their purpose.

Advancement in Trimming.

The vehicle trimmers have of late been stimulated to greater effort along lines of supposed originality in the pursuit of their art. The opportunities for the display of original ideas or conceptions as to the most appropriate trimming have never been very elastic. Rather hard and fast rules have prevailed. The thought of departing from the accustomed pathway has seldom entered the mind of the trimmer. It has not been altogether his fault, for he has not received much encouragement from his employers.

And yet comparing trimming years ago with trimming to-day there is a marked difference in effect, rather than in method of doing work or in material used. The texture of material has been modified materially, quality has improved and inferior material in many cases has been made to answer this purpose of dearer material.

Years ago a degree of carelessness was apparent in much of the work done, but the standard of work has been raised. In almost all work there is evidence of a desire to produce the best possible effect at the least safe cost. The increasing varieties of material allow room for choice and taste, and the general effect is progressive. There are fewer complaints nowadays of fraying out and discoloration and sinking and bagging. The work as a rule is better done, to the advantage of manufacturer, dealer and buyer.

Red Hickory to the Front.

Red hickory is to have its rightful place. It is to be promoted to its proper sphere. The prolonged experiments made with red hickory, or red and white mixed, have placed it in the category with white. Every possible element of strength and weakness has been sized up, weighed and tested by scientific rules. Strains, iron streaks, bird pecks, cross grain, knots and their short curves, grub holes, sun checks and every other condition to which timber is subject have all been subjected to severe testing for their ultimate effects in structures of which they are a part. The manner in which the work has been done has elicited the profound regard of all practical users of wood. Much information has been gleaned which before was hazy or empirical. Supposed disadvantages of timber containing apparent defects have been found to be less disadvantageous than formerly believed. For constructional purposes builders can now have a clearer idea of the actual merits of the timber used which does not come up to this ideal standard than they have heretofore had.

While buggy builders will be especially benefited by these conclusions, all builders will find themselves better able to proceed with construction, and where they guarantee a job or a hundred jobs they will be able to do so with a greater degree of confidence than before this exact nature of theoretically defective timber was known.

For months past we have been reading of the Palo, Colorado, rubber plant, but it has as yet furnished very little or no commercial rubber. It is being promoted with zeal, and if all that is said of it turns out to be true it will be an avenue of escape from high and possibly higher prices, when normal conditions return. Our correspondence at first hands, with some interested in this plant, shows that those who are trying to make the best out of it have great faith in the outcome. Estimates as to yield, cost, etc., are not assuring. Meanwhile rubber acreage is steadily increasing in Asia and Africa, and the strain between supply and demand will within probably three years be greatly reduced.

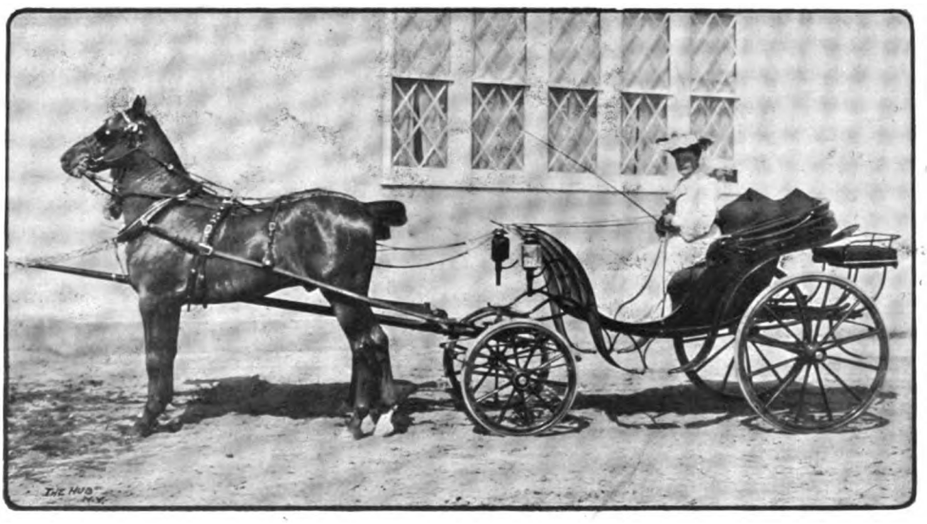
A good deal of capital is going into horse breeding farms or stations, according to details furnished by interested parties. Thousands of farmers who never took any interest in raising horses for market are now turning their attention to this inviting source of income. Horses are yearly advancing in price, although during the past year there has been a slump. Farmers' necessities and the needs of municipal traffic constitute sources of demand which influence enterprise. The importation of percherons and other famous breeds, and the demands abroad for stock horses, emphasizes the opportunity for an additional source of income to all who will go about horse breeding in the right way.

Digitized by Google

Illustrated Carriage Section, March, 1909

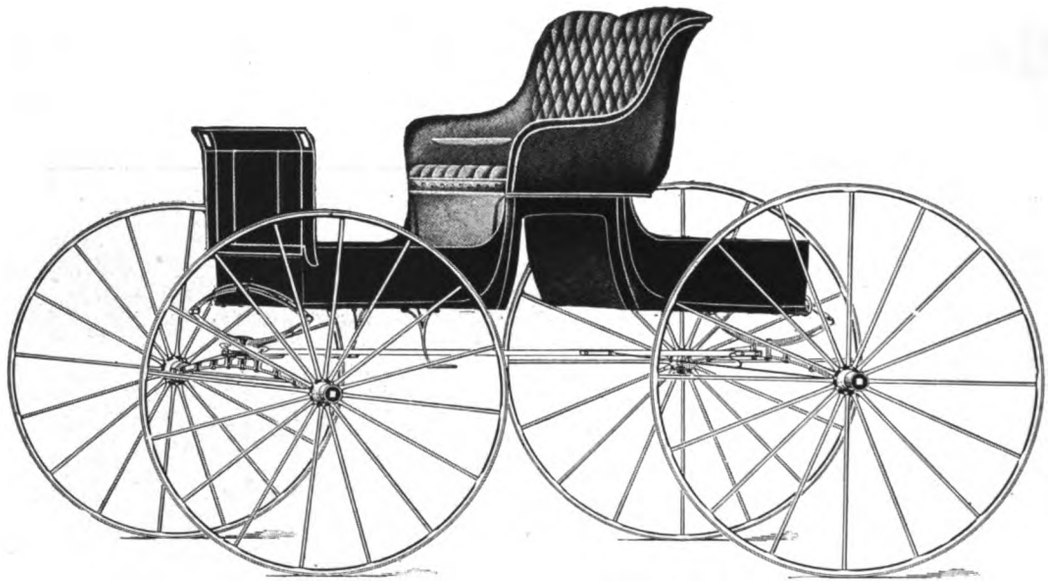


FOUR-MULE-TEAM DELIVERY WAGON.



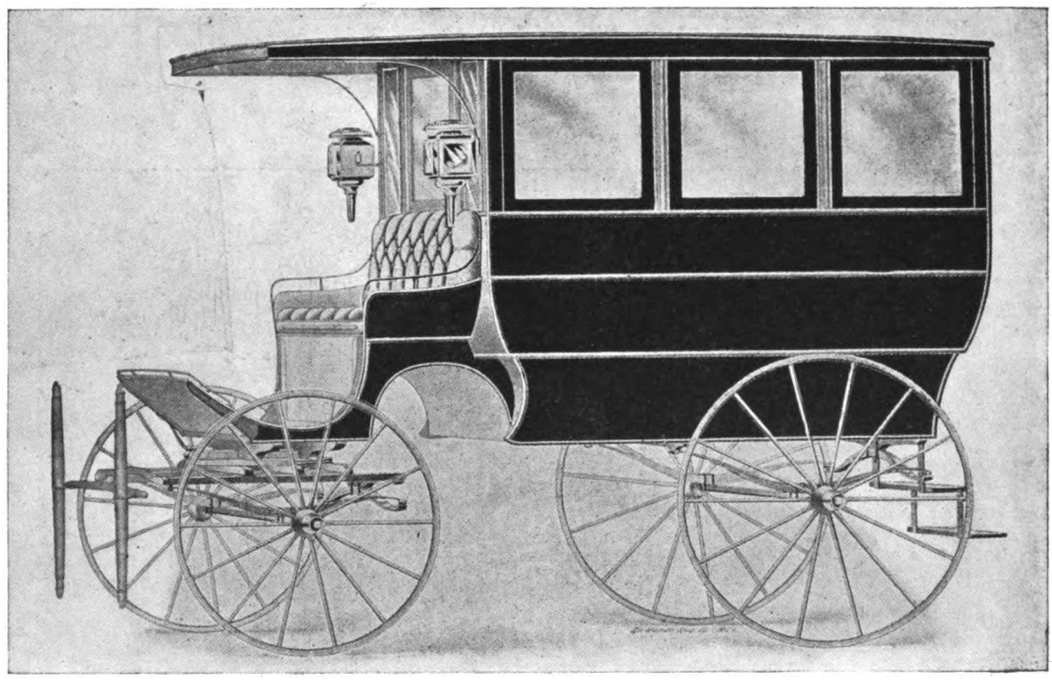
LADY'S DRIVING PHAETON AND TEAM.

Digitized by Google



END-SPRING CUT-UNDER DELIVERY WAGON.

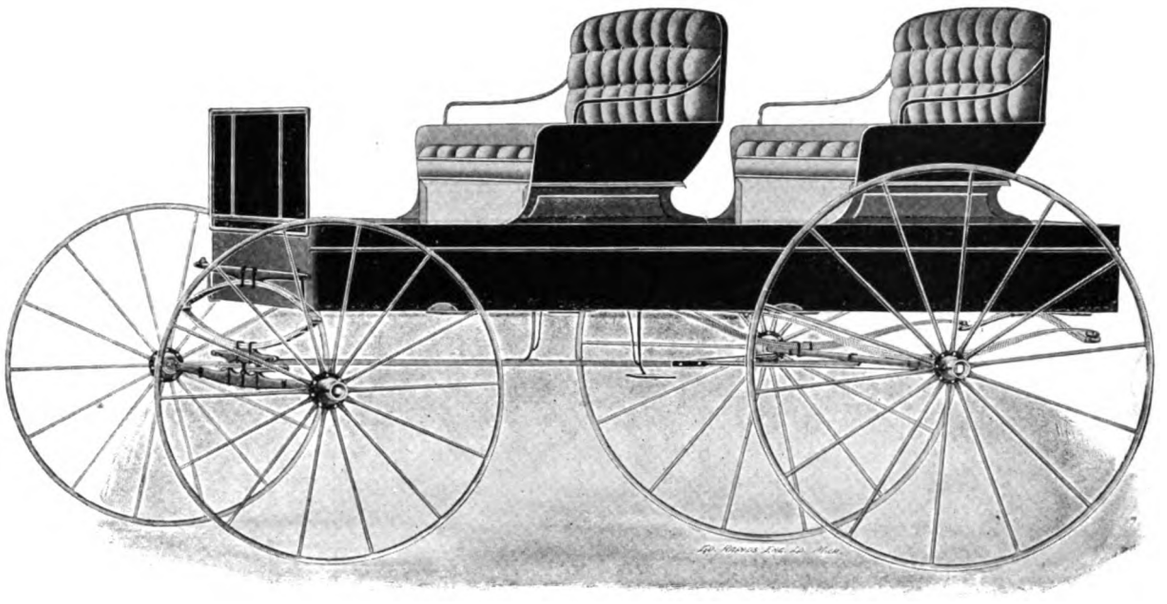
Manufactured by Parry Mfg. Co., Indianapolis, Ind.



FULL PLATFORM WAGONETTE.

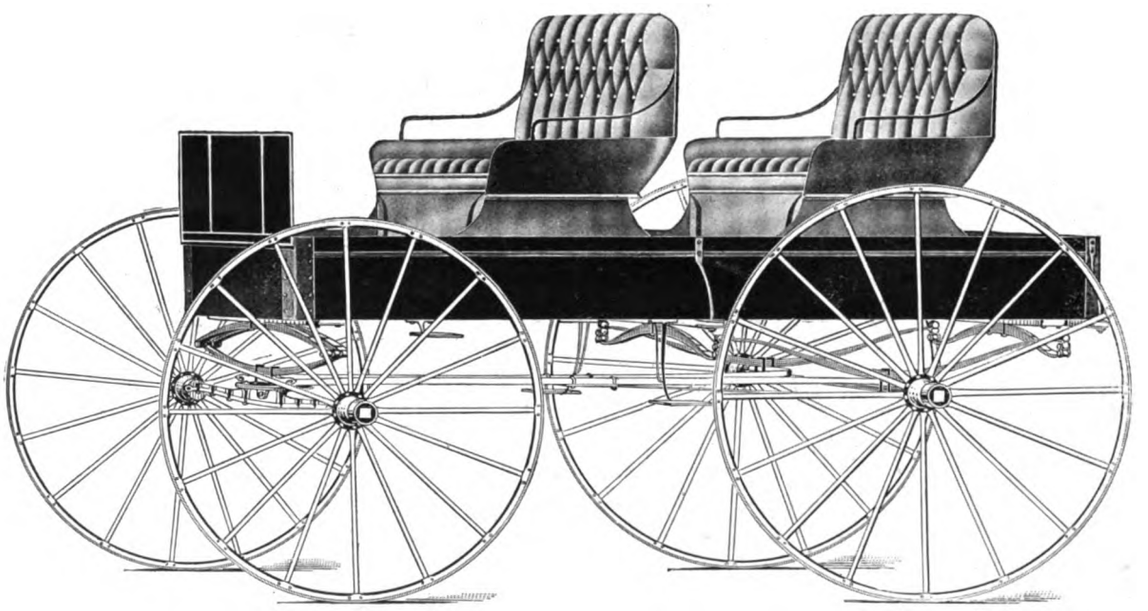
Manufactured by Elkhart Carriage & Harness Co., Elkhart, Ind.

Digitized by Google



HALF PLATFORM SPRING WAGON.

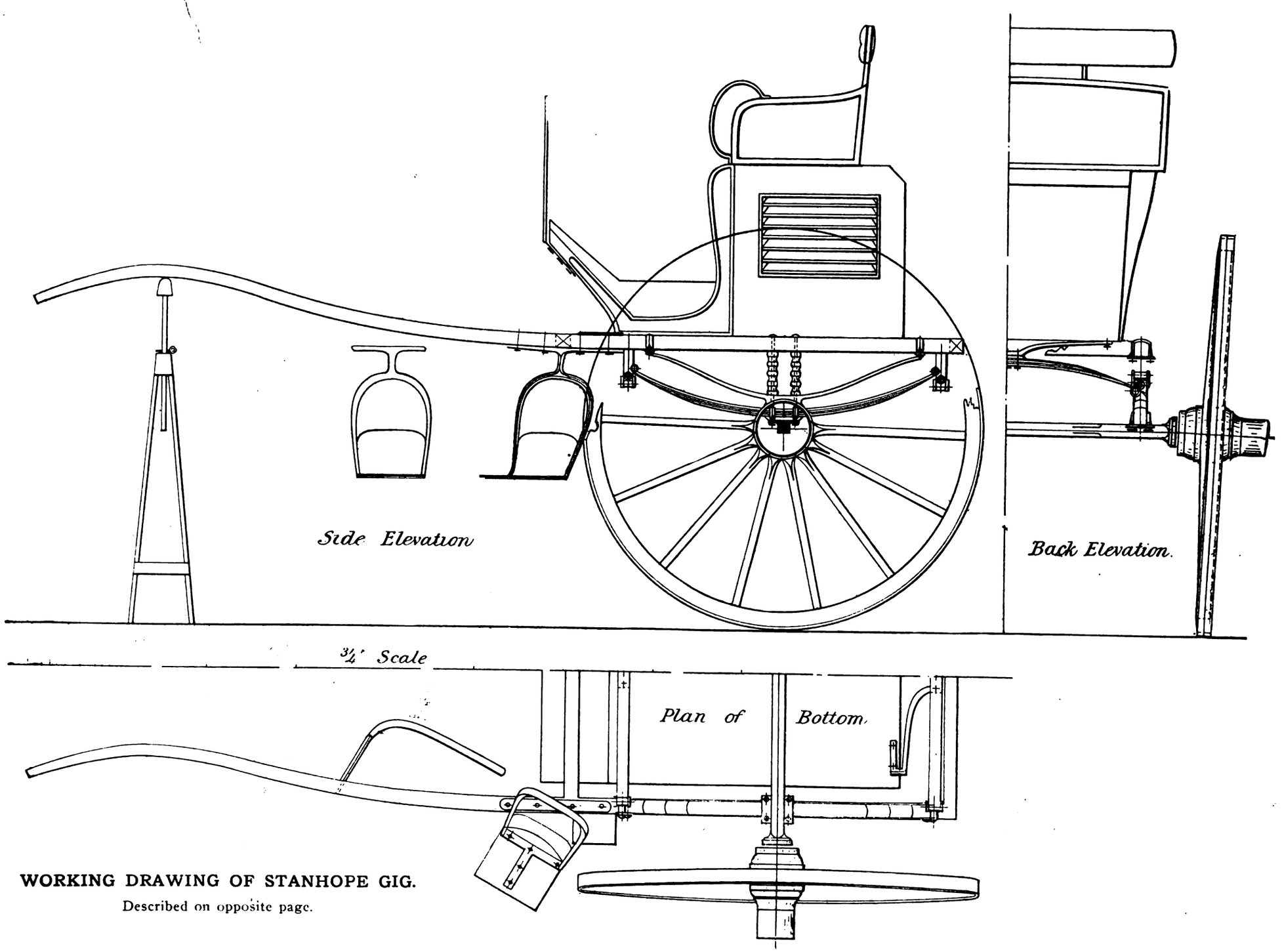
Manufactured by D. M. Sechler Carriage Co., Moline, Ill.



CLIMAX GEAR WAGON.

Manufactured by Frank J. Enger, Cincinnati, Ohio.

Digitized by Google



WORKING DRAWING OF STANHOPE GIG.

Described on opposite page.

Digitized by Google

Wood-working and Smithing

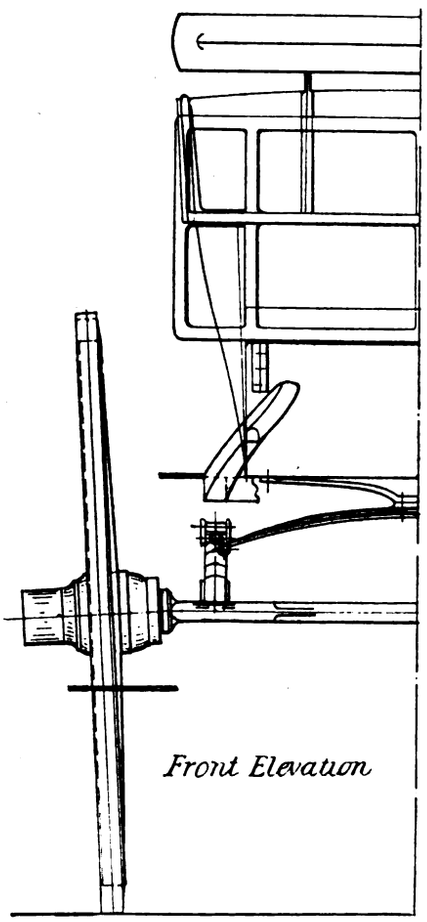
WORKING DRAWING OF STANHOPE GIG.

From Coach Builders' Art Journal.

Drawing on opposite page.

The design shown this month represents a Stanhope gig on platform spring hanging, with outside shafts, supported to the axle. This is one of the old time Stanhope gigs so much in demand by the gentleman driver.

Specially is here to be noticed the hanging of the body on a platform hanging, that means two side springs and two cross springs; the body is connected to the cross spring with a support iron in front and back, as shown in the front and the back elevation. The shafts are connected to the axle with an iron



stay, which is fastened on the top of the spring with two bolts covered with two wooden turned pedestals and connected with the spring clips. The iron stay of the carriage is made to a depth of harmony to modify, as much as possible, the depth of blocks between the shafts and the springs. The cross springs, both back and front, are connected with D shackles.

This style of suspension on platform or mail spring, with body mounting and shaft mounting, as shown in drawings, makes very easy riding in a carriage of this kind and protects the body from shaking through the shoulder motion of the horse; there is a stirrup-step mounted to the shaft and a second step on the top of the shaft.

In the drawing is shown the front, the side and the back elevation, also a plan of the bottom.

The principal dimensions are:

Length of seat body, 1 ft. 5½ in. Depth of seat body in center, 9 in.; at back, 11 in. Length of boot body at top, 1 ft. 9 in.; at bottom, 1 ft. 11 in. Depth of boot body on side, 1 ft. 11 in. Distance from dash to pillar, 1 ft. 9½ in. Width of Stanhope pillar, widest part at top, 3½ in.; at neck, 2½ in. Depth of Stanhope pillar at entrance, 2 in.; of filling in piece at entrance, 4½ in. Length of foot-board, 1 ft. 4 in. Rise of foot-board from bottom of boot side, 1 ft. Depth of dash, 1 ft. 7½ in. Depth of dash, 1, 7½ in. Width across foot-board, 2 ft. 7 in. Width across Stanhope pillars at seat line, 3 ft. 4 in. Width across seat at back at top, 3 ft. 8 in. Width across seat at back at bottom, 3 ft. 6 in. Width across the boot body at back, top, 2 ft. 9 in.; at bottom, 2 ft. 6 in.; Depth of venetians, 11 in. Length of venetians, 1 ft. 4½ in. Length of shafts from draw bar, 5 ft. 10½ in.

Wheels—Height of wheels, 4 ft. 6 in. Diameter of hubs, 8 in. Spokes, at hubs, 1½ in. Felloes, 2 in. Tires 1¾ x ½ in. Length of spring from centers, 3 ft. 6 in. Number of plates, 5. Thickness of plates, 4 plates, ¼ in.; 1 plate, 5-16 in.

Axle—Length from collar to collar, 3 ft. 9 in. Length to center of flaps, 3 ft. Thickness, 1½ in.

DESIGNING UNDER CARRIAGES.

Finding Locking Room and Lock Stop.

Over a long series of years The Hub has frequently dealt with the problem of locking stops to under gearing, but as it is possible to solve the same problem in geometry and arithmetic in many different ways and working, so it is possible to explain the various methods of finding the necessary locking angle and space necessary in under carriage designing to the body's construction.

In the designing of bodies of the Victoria type, where the locking room is confined to the most exact spacing owing to the peculiar construction of these bodies to effect a clear locking, it is not infrequently the case to find the front wheels made to a narrower width of track than the hind wheels in these carriages.

It is not, however, a plan to be followed without a strong necessity, because in country roads the wheels are pitched to a double track, thus increasing the draught. This property in the tracking of a carriage to the road is not of any moment where it is used on town roadways which are hard, and where a double track has scarcely any impediment to the draught, but on country roads and in localities far away from the more refined agencies of good roads, a double track to a vehicle entails a heavy drag on the power of a horse, while it tends to strain the undergearing to a double pull, which of course is a tax upon the constructional constitution of the vehicle.

In the designing of carriages it is necessary for the designer to have a full knowledge of carriage construction from every standpoint. But this is where the purely practical man so frequently finds his shortcomings in laying out the necessary points in the full practical hanging of a carriage. He generally flies to a registered data of this and that need, while if he were possessed of a thorough technical and practical knowledge in working unison these data would be quite unnecessary.

Data is in a general way to a practical man what crutches are to a cripple. The technical and practical coach builder does not require such helps any more than it is necessary for one to carry arithmetic in one's pocket to see how to work out a sum.

Data is only necessary as a register in the matter of leg room, width and breadth of seating room, the height of seating room in broughams, handsoms, and similar carriages.

Digitized by Google

But the problem immediately before us is, how to find the locking stop of an underworks at any angle by a scientific process.

We will suppose that the front section of a Victoria body, as shown in Fig. 1, is typical of similar vehicles, drawn out on the blackboard in the workshop, and it is sought to demonstrate the

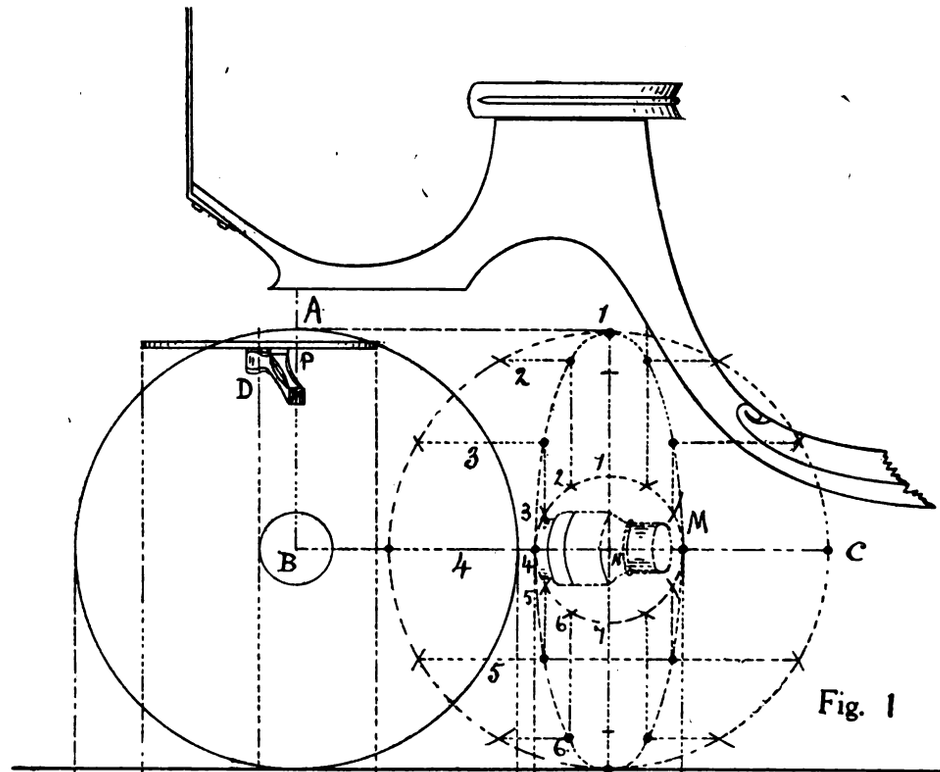


Fig. 1

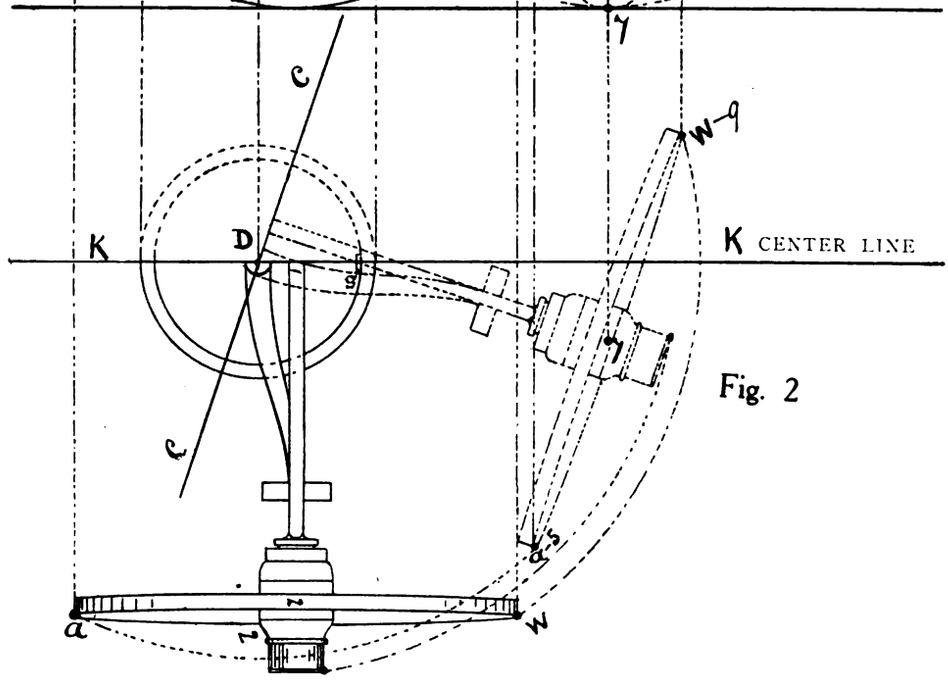


Fig. 2

locking room of the under carriage under the body, as far as is practicable within the confines of the body's lines.

Having set out the position of the front wheel, and the compass of the bottom bed, to a settled width of track, draw the center line as in the half plan, Fig. 2, and project the wheel down to it. Then set off from the center line half the width of the track 1 2, and project the center of the bed down on the line D D and draw out the half plan lines of the shape of the bed.

Having set off the position of the wheel in plan at points A A, and the dish from 2 2, the elliptical curve of the wheel is drawn in, supposing the dish of the wheel is 1 inch, then the centers A A will be ½ an inch forward of the track point 2, and the elliptical shape of the wheel 1 in. in depth.

The position of the axle in the plan is drawn parallel to the line A B in the elevation. To find the nearest point of the wheel to the arch line of the body, take center D in the plan and the diameter W, and describe the arc W W. In working the lines to a practical issue you can produce this arc indefinitely. Now project the wheel in the elevation from A to 1, and drop vertical lines from the arch down to the plan, and where the line cuts the arc of the track at W is the extreme center of the wheel on the lock horizontally. Now mark off the diameter of the wheel from center D with the arc A A 5 and strike the diameter off from W 9 as center at A5, and project the extreme point of the

Digitized by Google

wheel A 5 up into the elevation on A 4. These distances give the elliptical position of the wheel in width.

From the points A5, W9, draw the axle at right angles to them, as shown by chain lines; also the shape of the bed as well. and its position to the locking stop at the center of the transom wheel, where it is seen in contact at S. The line C C drawn through the center D is parallel to the centers of the wheel on lock in the plan at A5, W9, and represents the center line of the track of the wheel when on the lock in that position.

Having drawn the wheel as in the plan, proceed to define its position in the elevation. From the center of the hub point 7 in the plan, project the vertical line 7 7 1, and project the horizontal diameter of the wheel in elevation at B C, and take the intersecting point N as center and describe the circle of the wheel in chain line, and with the same center describe the small circle to the diameter of the angle of the wheel in plan. Now set the circumference of the projected circle of the wheel into twelve equal parts; also set off the inner circle into twelve equal parts. The diameter of this circle is the minor axis of the ellipse traced by the angle of the wheel on the lock.

Then draw on the outer circle through the intersecting points the horizontal lines 1, 2, 3, 4, 5, 6 and 7, and on the opposite side as well. Then these lines are cut with vertical lines 1, 2, 3, 4, 5, 6 and 7, which are produced from the inner circle, as shown, and where these points cut they form the elliptical figure described. The top and bottom curves of the ellipse can be drawn in from the intersecting points of the ellipse. The curve of the ellipse near the body's arch shows how much clearance the wheel would have when on the lock, and how the track of the wheels would have to be pitched to provide a correct avoidance of the panel when the body was weighted.

The explanations in working out this problem of locking have been elaborated to show the power and strength of technical knowledge when harnessed to the practical uses of carriage suspension in this particular.

EFFECT PRODUCED BY THE ENGLISH PATENT LAW.

Legislation in England in relation to patents is having its effect elsewhere. Representative Currier has introduced a bill in the United States Congress to amend the patent laws so as to provide "That whenever a patent is issued to any citizen or subject of a foreign country it shall be subject with respect to its manufacture in this country to all the limitations, conditions and restrictions that are imposed by the country of said citizen or subject upon the manufacture in that country of patents issued therein to citizens of the United States: Provided further, That this act shall not affect any patent heretofore granted."

The Times (London) reports that the French government proposes to amend the law of 1844, which enacts that failure to exercise patent rights shall entail lapse of patent, in the following sense: Patent rights shall be held to lapse in the event of failure on the part of the holder either to exercise his rights in France or in the French colonies for a period of three years after applying for his certificate, or to resume exercise after a similar interval, or secondly, in the event of only partial exercise of the patent in French territory. In the second event the patent courts will be invested with discretionary powers to call upon the holder of the patent to show cause why he should not exercise his rights in French territory "in an adequate degree."

An English barrister, touching on this subject, makes the following suggestion: "There are divers courses open to the inventor foreign to England which will enable him to avoid having to set up a factory on British soil. In the first place, he may manufacture the parts of a complicated machine, and have them assembled in England. The point has not yet been decided, but the English courts may hold that this constitutes manufacture."

PROPOSED GRADING FOR HICKORY VEHICLE WOOD-STOCK.

At a joint conference held December 28, 29 and 30, 1908, authorized representatives of the United States Forest Service, the Wheel Manufacturers, Spoke Manufacturers, Rim Manufacturers and the National Hickory Association agreed upon a set of proposed grading rules for hickory vehicle wheel stock. These rules are to be submitted to the users of this kind of wood for the express purpose of getting their opinions and criticisms, after which they will be presented at the annual meeting of the National Hickory Association to be held in Cincinnati, O., about April 15 next. These rules have been approved by those using a large percentage of hickory dimension stock, and is entirely in accordance with the advice of the Forest Service of the United States Department of Agriculture. Following are the proposed rules:

Spokes.

Based upon the strength of hickory wood-stock as determined by the mechanical tests of the Forest Service of the United States government, in which it was found that red or red and white mixed hickory of equal dry weight and having similar defects was of the same strength as white hickory, and should be graded with reference to its quality regardless of its color.

These tests having been approved and accepted by the manufacturers of vehicle wheel wood-stock and the manufacturers of vehicle wheels, it has been determined that there shall be five grades, to be known as A, B, C, D and E, respectively.

The various recommendations for grades which are herewith made were prepared upon consultation with the representatives of all vehicle interests actively engaged in the production of hickory vehicle wood-stock, and the advice of a representative of the Forest Service of the United States Department of Agriculture, and a close following of the recommendations issued by the Forest Service of the United States Department of Agriculture, in Circular No. 142, which is a compilation of a large number of mechanical tests made at a government experimental station of the Forest Service, through the co-operation of the National Hickory Association.

The main recommendations in this circular are as follows:

"Defects in spokes commonly include iron streaks, bird pecks, cross grain, knots and worm holes. A spoke containing a worm hole is dangerous, as it is impossible to tell to what an extent the spoke has been bored on the inside.

"Iron streaks are supposed to be caused by the infiltration of foreign coloring matter through bird pecks. Iron streaks and bird pecks, when they show only slightly, apparently do not affect the mechanical qualities of a spoke. They are not generally found in the heaviest spokes, but among those of medium or light weight.

"Spokes failing from cross grain generally break into two pieces.

"Defects, such as knots, have greater weakening effect when near the center than when near the ends.

"The spoke tests definitely show three things: First, that the present system of grading buggy spokes does not correspond to their strength and toughness; second, that the factor denoting the strength and toughness of clear spokes varies directly with the weight; third, that red, white or mixed spokes of equal weight have practically the same resilience factor."

Grading Suggestions.

"The terms 'second growth' and 'forest growth' are so loosely applied in the designation of grades that they are confusing and might well be discontinued. These terms, as used by the trade, distinguish between good and poor wood, and disregard the true meaning of the words.

"In order to use the terms in their correct sense, the particular species and conditions of growth would have to be known for each piece of material. Commercially this is impossible. In reality a large per cent. of the stock which is classed as 'second

Digitized by Google

growth' is forest grown stock of good quality.

"As changes in the forest take place, due to lumbering and new growth, it may be asked at what point does the wood cease to be 'forest growth' and become 'second growth?'

"The manufacturer can not definitely answer this question, and can not tell but what it is possible to secure both kinds of stock from the same tree. The term 'black hickory' is also confusing when used to designate a grade, because it is the accepted common name for certain species.

"There is much discrimination in the trade against defects, such as knots and checks, but little is said about cross grain. The tests have continually shown that in such material as spokes, that cross grain is one of the most serious defects. Defects that will be removed in finishing should not be considered defects by the inspector. Clauses in grading rules, such as 'Clear of any defects impairing the strength,' are too indefinite."

The representatives of the vehicle wood-stock trades above mentioned recognize the importance of the recommendations from the United States government, and these grading rules are prepared to the best of their ability, in accordance with the above recommendations, and which at the same time could be commercially applied to their business.

"The most useful result of the vehicle wood investigation is the placing of red hickory in its proper class. The real worth of red hickory, as shown by the test and not by the color, is a point that should not be lost sight of in grading hickory stock."

Definition of Terms.

A very dense growth is a growth in which the nonporous part of the annular ring covers over three-quarters of the area of the annular ring; and the remaining one-quarter contains a small number of pores.

A dense growth is one in which the non-porous portion of the annular ring occupies at least one-half of the annular ring, and is slightly more porous than the very dense growth, and accordingly that timber which contains a less per cent. of non-porous growth and a larger per cent. of porous growth is representative of a lower grade of timber.

A blemish is that which, while marring the appearance of the spoke, does not affect the strength of the timber.

(a) Stains. A stain is a discoloration caused by improper care, or handling, by improper piling, by being left in the weather or on the ground during the warm and wet seasons.

(b) Iron Streaks. An iron streak is supposed to be caused by the infiltration of foreign coloring matter through bird pecks, but does not affect the mechanical quality of the spoke.

A bird peck is a slight defect caused by the bird pecking a hole in and through the bark of the tree into which there settle foreign substances that discolor the timber.

A bastard spoke is one in which the growth or annular rings do not run across the narrow way of the spoke.

A cross-grain spoke is a spoke in which the growth or grain of the timber does not run parallel with the center line of the spoke.

A sound knot is one in which the wood is as solid as the wood surrounding the knot.

A short curve or dip in the grain or growth is a curvature or deflection caused by a knot.

A snarl is a twisted grain or growth in the wood.

A grub hole is a hole about one-quarter inch in diameter caused by a grub worm boring a hole usually lengthwise of the growth of the timber.

A powder post piece of hickory timber is caused by a very small worm that continues to work in the timber after it has been cut, seasoned and even manufactured into the finished vehicle. While his work does not frequently appear on the outside, the inside may be entirely reduced to powder—hence the term powder post.

A worm hole is a clean, open hole about one-sixteenth inch in diameter, and is easily visible, caused by a bug usually working in partly seasoned timber.

A sun check is a season check caused in seasoning, and usually takes place in the best quality of timber. In some instances these checks are so very small that they do not impair the use or strength of the timber, and should be used at least in the lowest grade.

"A" grade is the first and highest grade. Of all white timber of very dense growth; must be straight grain and free from streaks, stains and all defects.

"B" grade is the second grade, and must be practically straight grain, of dense growth. Of all white, and of red, and part white and part red timber. The red or part red and part white must be fully equal to or better in quality than the white in this grade.

All spokes in this grade must be free from all defects and no spokes shall be more than one-quarter bastard.

"C" grade is the third grade, and must be of medium quality of either white, red or white and red mixed timber. This grade will admit of spokes of good quality timber not admitted in the A and B grades on account of cross grain and all slight blemishes, such as iron streaks and stains, but that are equal in strength to a clear spoke of this grade.

Cross Grain. The grain shall not run in the length of the spoke at any place at a greater angle than one inch in eighteen.

Short curves or dips in the grain not to be included in this grade.

"D" grade is the fourth grade. The timber in this grade, although clear and straight grain, of white or red, or white and red mixed, is of a weight and quality not admitted in the higher grades. Also, spokes of a high quality of timber, equal in strength with the straight grain spokes in this grade, but with blemishes such as iron streaks and stains, and defects such as knots and bird pecks that are sound; also cross grain, provided the grain shall not run in the length of the spoke at any place at a greater angle than one inch in twelve. Short curves or dips in the grain shall not extend more than one-third of the width or thickness of the spoke.

"E" grade is the fifth and lowest grade, consisting of spokes that can be used, but such as are not admitted in the higher grades on account of quality of timber and defects. Spokes with defects such as powder-post, worm-eaten timber, and with open defects such as grub holes, checks, splits, bird pecks and otherwise unsound, and spokes with defects such as knots, large bird pecks or snarls in the head, throat and rim end, and very brash timber such as has practically no fiber and strength will not be admitted in this grade. Spokes with slight season checks may be used in wheels of this grade.

Rims.

Note: The same basing upon strength, tests, recommendations, defects, grading, suggestions, definitions of terms and rules, as applied to spokes, are applicable to rims as well.

EVEN THE TAXICAB IS NOTHING NEW.

Dr. Giles, professor of Chinese at Cambridge, has recently discovered in the dynastic histories of China a complete specification of the mechanism of a Chinese taxicab. They are first mentioned under the Chin dynasty, A. D. 265-419. From that time down to the middle of the fourteenth century frequent allusions to such vehicles, known as the "measure mile drum chariots," are to be found.

Under the year 1027 A. D. and again under the year 1107 A. D. full particulars are given as to their construction, the number of wheels, their positions, the number of cogs on each wheel, etc., being all definitely stated.

On completing a translation of the specification Prof. Giles placed it in the hands of Prof. Hopkinson of the engineering laboratory, with the satisfactory result that from a specification recorded by the Chinese some 900 years ago Prof. Hopkinson has constructed a model of a wheeled vehicle which accurately registers the distances traversed.

At each li, or Chinese mile, which is about one-third of an English mile, a drum is struck, while at every tenth li a bell is rung.

Digitized by Google

PAINTIING AND UPHOLSTERNG

PRIMERS FOR CARRIAGE AND WAGON WORK.

A good primer is highly essential—indispensable, even—and it may be shop mixed or of the patent surfacing variety. It may also, in both cases, be a very excellent article, or quite the reverse.

If shop mixed, probably no better all-round primer is to be had than that made of French yellow ochre, rich in silica, and of fine grain. This ochre is a powerful absorbent of raw linseed oil, and when used in equal parts with keg white lead of good quality, it forms a primer of most excellent merit. The ochre of itself is an unsurfaced pore filler, and the lead lays close to the surface and affords a close intact, and fine pigment film, the two working in harmony, yielding a surfacing and filling-up medium of uncommon value.

An excellent way to prepare this primer is to mix the ochre and lead to a thick paste in raw linseed oil, and run the mass through the shop mill to effect a more perfect incorporation, after which add more oil, and cut with turpentine, using a gill of coach japan to each ¼ gallon of primer. About three parts raw linseed to one part turpentine, for strictly hard wood primer, will suffice as the thinning combination.

In this connection, it may not be amiss to say that at the present time there are many high class, trustworthy, ready-to-use primers being marketed, which are probably as cheap, all things considered, as the shop mixed ones, and will afford entirely reliable results. It is a matter of individual preference, both systems being good.

THE REMOVAL OF VARNISH WITH AMMONIA.

This work must be accomplished with exceeding care if satisfactory results are to be had. It is a practice, however, in which, in many cases, a good deal of uncertainty exists, the condition of the surface governing to no small degree the point of uncertainty referred to.

When the paint and primary foundation is solid and intact, and quite free from fissures, the ammonia may be used with comparative safety if handled by a careful workman. When used without reference to its biting and penetrating property trouble is bound to ensue, even when all other conditions are promising.

If the cracks extend below the varnish coats, or the color coats, the ammonia is more than likely—indeed, is almost certain—to penerate through to the wood by way of the crack and fissure avenues, and having once reached the wood the entire structure of pigment is in line to perish from the effects of the pangent alkali. And more than this, subsequent foundations reared with great care over this ammonia-stricken wood are likely to suffer. A friend of the writer, a well known master car painter, advises that he once used ammonia upon a cracked car surface and it finally became necessary to resheath the car before the evil effect of the alkali could be avoided.

A cracked surface of varnish may be removed according to the following modus operandi: First apply 16° ammonia to the surface with a brush, making the distribution as even and uniform as possible. Allow the solvent to remain until the varnish is softened, after which apply some hot water to the surface, and with a wide, say, 2½ inch glazing knife, proceed to remove the varnish or such a depth of it as the ammonia has taken hold of. If under a glass, or by means of the naked eye, it is found that the fissures are still present, repeat the foregoing operation, finally washing the surface with much care in order to destroy the strength of whatever trace of ammonia remains.

In case the cracks extend into the color coats, the same process may be carried forward untid this film of pigment is taken off, but when they go deeper than that it is in all cases advisable to resort to burning the paint from the surface, thus insuring a safe and receptive base for the varnish and pigment structure.

As a rule, paint and varnish removers, among which at the present time there are numerous very excellent ones, eat deeper than ammonia, especially the 16° material above indicated, and are therefore more liable to injure the foundation coats, when it is desired to save such coats. The 16° or commercial ammonia, while acting powerfully and swiftly upon splintered and service-worn varnish, is less active and strong upon paint fabrics, and when not permitted to reach the wood its strength is usually dissipated in the course of a few hours, should a slight percentage of it, after washing the surface, remain.

BRUSH NOTES.

The carriage painter who happens to be a brush buyer cannot for a moment afford to be "off his guard" when making his purchases. The first safeguard consists in buying of reliable, high-grade manufacturers; indeed, we may say this is the all embracing safeguard. Unfortunately, however, many carriage painters are never quite able to separate the name of the firm from the price quoted, and accept the latter rather than the former as a guide to govern their buying.

In New York and other large cities there are men engaged in buying up old, worn out paint and varnish brushes. These brushes are then cleaned out with strong alkali, or even with liquid varnish remover, and then washed out in benzine or turpentine, dried, and eventually disposed of to the brush manufacturer given to listing his products at the lowest market quotations.

This old stubby or partly worn out bristle stock is mixed, in brush making, with good long bristles, with the result that the brush at the time of buying looks well enough to last a lifetime, but proved in service to be not only a bristle shedder, but an inferior tool all the way through. In buying brushes, quality should be first. All else, including the price, is of secondary importance.

The carriage and wagon painter finds the oval chiselled varnish brushes for wagon surfaces most excellent tools. Some of the finest working brushes of this class are made of Chinese bristles, and are prepared and dressed in China, after a method that gives them, in connection with absorptive and wearing properties, exceptional elasticity. It is not to be understood, however, that the Chinese bristles will outwear, or wear equally with, the European bristles consumed in enormous quantities by the American brush maker. Nevertheless the brushes made of Chinese bristles have qualities which appeal to varnishers apart from those features which differentiate them from the brushes made from European stock.

A brush that through neglect or accident has become too hard for further use may often be softened up by soaking in hot raw linseed oil.

Soaking the brush in hot turpentine, to heat which care should be exercised, will restore the elasticity to the brush gone "soggy" or in other words lost its life.

When the varnish brush chances to accidentally alight on the floor, hold it over a vessel at an incline of 75°, and pour turpentine over it freely. Then draw it firmly across the edge of the

Digitized by Google

pallete knife, raise it a second time with turpentine, and then break directly into the varnish.

Strange what a difference exists between the varnish carrying capacity of two brushes of similar grade and apparently alike in all respects.

Quite to the same extent exists a difference in the quantity of varnish that can be laid and made to stay on the surface with one brush, as compared with another apparently in no wise inferior to the first. The varnish maker with rare ingeniousness ascribes this, we believe, as brush inequality, and decides that it is unavoidable, but in these latter days alike exceptional.

For varnishing the running parts of heavy wagons, trucks and drays, large oval chiselled varnish brushes, made of best white European bristles, carefully selected, are the most available tools. They carry a large quantity of varnish, are soft in stock point and elsewhere, and wear out slowly. Varnish always flows in full volume under such brushes, a merit which gives the varnisher confidence.

Camel's hair brushes should, before use, have the metal binder "pinched" at the edge from which the hair projects. This lessens the tendency to shed stock. Such brushes, if possible, should be first used in oil mixed color, after which break them into japan ground pigments. Suspend these brushes, when not in use, in clear water, hanging them to swing clear at the point, and protect them from the dust and dirt.

AMERICAN PATENTS IN ENGLAND.

I have heard it said that many foreign manufacturers, includin Americans, were establishing factories in the United Kingdom, or licensing British manufacturers to manufacture patents for them under their patent rights, but have not learned of any Americans locating in this consular district, writes Consul Albert Halstead, of Birmingham, England. From inquiries made of me by owners of factory property it would seem that there were plenty of factories that British owners wished to sell or lease to American manufacturers at a good round price.

While there appears to have been no establishment of American factories in this section of England since the act became effective, I learn that a number of British firms are working American patents under royalties. One Birmingham jewelry firm is busy making an American specialty that requires electroplating, whereas most of the Birmingham jewelers are complaining of slack times, and another firm has laid down a special plant to manufacture a certain galvanized-iron article that has not previously been made in England, but is in general use in the United States.

I am also told that other Birmingham firms are profiting through working American patents for American manufacturers, but British manufacturers benefiting from the new British law, and making American patented articles under license, are not disposed to discuss the matter or to advertise their success.

Birmingham manufacturers themselves are not encouraging the establishment of new factories by Americans or other foreigners, because such factories would ultimately compete in other lines as well as in those for which they were especially established, but are encouraging Americans to sell them their patent rights, or to authorize their manufacture under royalties.

Taking the United Kingdom as an entirety, it would seem that the number of American manufacturers who have protected themselves by complying with the provisions of the law is very considerable, and represents a large amount of work taken from American workmen; but there must be a far greater number who have overlooked the importance of so doing, and who are thus risking the forfeiture of their patents and the manufacture of their articles in the United Kingdom by British firms and without compensation, even though their articles have not as yet been introduced into this market, because the British manufacturers are very well contented with the new law and are watching keenly for all such opportunities.

THE ADVANCE IN WAGON PRICES.

Last December the wagon manufacturers' association adopted a resolution recommending an advance of 10 per cent. in the prices of farm wagons, effective May 1, 1909. This was done after a long conference during which the cost of production was thoroughly considered. It was stated by the manufacturers that the increasing cost of wood stock made it necessary for them to advance prices if they are to realize anything like a fair profit from their business. It was the unanimous testimony of the manufacturers that notwithstanding the many years of general prosperity the country had enjoyed, profits in the wagon manufacturing industry had steadily declined because of the fact that the principal material used, wood stock, had been constantly advancing.

In addition to this the manufacturers declared that the heavy demand for wagons had subsided and the expectations were for only a normal trade which could not return sufficient profit at prevailing margins, the overhead expense per job increasing as the volume of trade diminished.

Following the break in iron and steel the association met, as reported last week, and anticipating that the proposed advance might now be questioned, carefully canvassed the situation and found that the reduction on bar iron would enable them to effect a saving of about 60 cents on a 3¼ x 10 wagon. On the other hand they found that prices on certain items of wood stock have been advanced again and other advances are indicated. Then the association reaffirmed the resolution recommending an advance of 10 per cent. in wagon prices May 1, and individual manufacturers stated that they would make the advance whether others did or not.

These facts are retold here for the purpose of advising the dealers of the attitude of the manufacturers. If present plans are carried out, as many manufacturers say they will be, the advance of 10 per cent. will be made May 1. Some years ago the association recommended an advance and later withdrew the recommendation. During the interval between the date the resolution was passed and the time the advance was to take effect, there occurred certain changes which made it inadvisable or unnecessary to increase prices. This is the only time within our knowledge that a promised advance on wagons did not materialize.

Without assuming to give the dealers any advice relative to buying wagons for fall trade before the advance, we pertinently may call attention to this phase of the question and urge them to give it earnest consideration. An advance of 10 per cent. represents a tidy sum to the dealers. If they were absolutely sure that nothing would happen this month or next to cause a change in the plans of the manufacturers not many would hesitate to make provision for all or a portion of their fall requirements before the advance. This would mean not only to buy, but to have the wagons delivered before May 1 and settle on terms dating from delivery.

The saving would be worth while. Suppose a dealer who contemplates buying fall stock for delivery August 15 decides to advance the date of delivery four months, in other words, have the wagons delivered April 15. If his terms are six months he will have to pay for the wagons October 15 instead of February 15, 1910, or four months earlier. On a most liberal estimate the cost of carrying the wagons four months, including interest, insurance and other expenses, would be less than half of the proposed advance. The dealer would therefore pay less than a 5 per cent. advance on wagons thus purchased.

Assuming that the advance is an absolute certainty, this proposition is surely attractive to dealers whose finances and facilities justify them in buying goods so far in advance of the time they will be required. Whether or not the dealer can afford to take the risk he must decide for himself. The manufacturers say the advance is inevitable and we have been told that some of the jobbers are buying for delivery before May 1 wagons they will not need until early fall.—Farm Implement News.

Digitized by Google

General Topics of Interest to Trade

KEYSTONE WAGON WORKS TO BE SOLD.

Geo. Brooke, Jr., the Only Bidder, and Will Probably Secure the Plant.

John L. Coxe, receiver of the Keystone Wagon Works, Reading, Pa., was granted a petition on March 2 for authority to sell the real estate, plant, merchandise and materials of the plant to George Brooke, Jr.

Mr. Coxe was appointed receiver of the wagon works on Nov. 29, 1907, and appraisers were appointed, who made an inventory of the assets of the works, which assets amount to $143,380.30, as follows: Cash on hand, $227.88; book accounts receivable, $23,861.21; machinery, tools and fixtures, $10,039.40; merchandise and manufactured material, $64,251.81; and real estate valued at $45,000.

The liabilities of the company, as far as could be ascertained, amounted to $231,766.70, including a mortgage of $40,000.00.

The referee, by decree of court, was authorized to employ labor and operate the plant and preserve it as a going concern, in order to realize the greatest value possible for the stock, and this having been done Mr. Coxe states that at the present time the assets in hand amount to $145,586.74, of which amount the petitioner owes for merchandise $4,270.48, and has paid in addition to operating expenses $2,810.89 for preferred claims against the wagon works. $1,800 counsel fees were also paid out.

The petition states that the material and supplies on hand have no ready market, as some of it is old and obsolete, and if a sale be forced much less than the appraised value would be realized. It is also averred that to continue operations would not be advantageous, as it is impossible to get a sufficient number of desirable customers for the product of the plant.

Mr. Coxe has been able to get but one offer for the plant, that being from George Brooke, Jr., of Birdsboro, whose offer is as follows: Real estate and machinery, $10,000; the conveyance to be made subject to the mortgage of $40,000, and subject further to seven liens for $448.66; for the stock and merchandise, $30,000, which offer the petitioner deems a fair one, and that if the sale be consummated Mr. Brooke will assume the contracts entered into with the receiver and thus relieve him and the estate in his hands from all possibility of loss by reason of further operation.

April 5, at 10 a. m., was set as the date for a final hearing in the matter.

TO MAINTAIN PRICES.

The National Association has issued the following circular to its members:

"You are, of course, aware of the recent reduction made by the steel people in their selling prices. I think it well to impress on you the fact that the drop in steel prices does not warrant any reduction in the selling price of your manufactured product. On the contrary, your margins have been recently very unsatisfactory to you as manufacturers, and I think it is apparent to all that the present reduction in steel prices was absolutely necessary that you might be enabled to continue your present selling prices, and that without the reduction in steel prices of the last few days you certainly would have had to advance your prices to obtain anything like your just margin.

"It is earnestly hoped that you will not be influenced by these recent reductions in the cost of your steel to the extent of making any reduction whatever in your selling prices of your manufactured product." "J. T. Morrison, Secretary."

ANOTHER DEALERS' ASSOCIATION.

Virginia and North Carolina Implement Men Form Organization.

There was a fair attendance of dealers at a meeting held in Richmond, Va., February 25 and 26, on which occasion the Virginia and North Carolina Retail Implement, Machinery and Vehicle Dealers' Association was organized. J. D. Barkley, of Lawrenceville, was chosen temporary chairman.

After a discussion in which most of the dealers participated, and during which the need of organization was frequently expressed, it was decided to proceed to permanent organization, a committee being appointed to submit constitution and by-laws.

The convention adopted a constitution substantially the same as that recommended by the National Federation of Retail Implement and Vehicle Dealers' Associations.

The following officers were elected:

President—R. F. Dilliard, Blackstone, Va.

Vice-presidents—J. D. Markley, Lawrenceville, Va.; G. W. Harrison, Petersburg, Va., and O. E. Ford, Shelby, N. C.

Directors for one year—H. L. Smith, Petersburg, Va.; Q. A. Ellor, Chilhowie, Va.; W. T. Pace, Franklin, Va.; R. T. Mahone, Lynchburg, Va.

Directors for two years—R. P. Johnson, Wytheville, Va.; G. B. Todd, Norfolk, Va.; A. C. Sinton, Richmond, Va., and E. C. Tarter, Rural Retreat, Va.

The directors appointed Luther R. Spencer, secretary and treasurer of the Implement Company, Richmond, Va., as secretary and treasurer of the association.

Petersburg, Va., was chosen as the location for the first annual convention, which will be held November 17, 18 and 19, 1909.

The local papers having announced that the purpose of the organization was to "fight the trust," a resolution was passed asking the press to correct the error.

The secretary was instructed to apply for admission to the National Federation.

The convention gave a vote of thanks to Grant Wright for his assistance and elected him to honorary membership. Mr. Wright's paper, The Eastern Dealer, was made the official journal of the association.

Resolutions were adopted urging the dealers to shorten their selling terms and to get in line with the movement which the manufacturers have inaugurated with this end in view.

The parcel post was condemned and congressional representatives for the association's territory asked to fight the proposition.

A legislative committee was appointed to seek needed changes in the business laws of the States.

ADVANCE IN RATES TO PACIFIC COAST RESCINDED.

During the latter part of November, 1908, the Trans-Continental Association, which body of railroads control and publish all rates to the Pacific Coast, issued a new tariff, effective January 1, in which the rates to the Pacific Coast on many commodities were raised from five to twenty-five per cent., the advance in cents per hundred pounds on farm wagons and agricultural implements being ten cents.

J. T. Morrison, secretary of the National Association of Agricultural Implement and Vehicle Manufacturers, held several

Digitized by Google

conferences with the executive officers of the western railroads, protesting against the advanced rates on wagons and implements, and at a meeting of the Trans-Continental Association held in Chicago this month he appeared before the railroad men and pointed out to them reasons why rates should not have been advanced. The railroad officials have decided to restore at the earliest possible legal date rates that applied on farm wagons and agricultural implements prior to January 1, the date upon which the ten cents per hundred pounds advance in the rates was made effective. It should be understood that restoration of the old rates to the Pacific Coast carries with it the same action as regards rates to interior points in Oregon and Washington, including Spokane.

It is hardly possible for the Trans-Continental Association to issue the amendment that will carry the reduced rates and make it effective earlier than April 15 or May 1. Many members who have orders on their books for the Pecific Coast can, no doubt, postpone their shipments until a time that they can take advantage of this reduction of ten cents per hundred pounds in their rate.

Members other than those manufacturing agricultural implements, farm wagons and light vehicles can obtain by correspondence or otherwise from Mr. R. H. Countiss, secretary of the Trans-Continental Freight Bureau, Railway Exchange Building, Chicago, advice as to whether any changes in the rates to the Pacific Coast on their products were agreed upon at the last meeting of his Freight Bureau.

ANOTHER VEHICLE ASSOCIATION PLANNED.

Another carriage manufacturers' association has been projected by certain builders who believe that the vehicle industry is still minus the kind of an organization that will afford the largest possible benefits for its members. The idea is to form an organization to be conducted along the lines of the National Wagon Manufacturers' Association, which during the past five years has been very successful in advancing the interest of the manufacturers holding membership. It is reported that a well known implement man, now out of business, will be offered the secretaryship of the association, if formed.

CARRIAGE MANUFACTURERS' ASSOCIATION OF AMERICA.

The executive committee of the Carriage Manufacturers' Association of America held a meeting at the Auditorium Annex, Chicago, February 9. The object of the meeting was to strengthen the association and enroll all wholesale manufacturers on its membership list.

This will particularly interest dealers' associations and dealers generally, as knotty problems can be officially handled to the mutual benefit and in the best interest of the trade, and manufacturers and dealers greatly benefited thereby.

ELECT OFFICERS AND PROVIDE FOR ISSUE OF MORE STOCK.

At the annual meeting of the Consolidated Wagon & Manufacturing Co., at Salt Lake City, Utah, the following officers were chosen: Jos. F. Smith, president; W. S. McCormick, vice-president; Melvin D. Wells, secretary and treasurer; Grant Hampton, assistant secretary and treasurer; George T. Odell, general manager; George Romney, James H. Moyle and Charles S. Burton, executive committee. It was decided to issue 3,000 shares of the increased capital stock, pro rata at par, to the stockholders. It was also provided that holders of common stock may retire their holdings and receive preferred stock upon the basis agreed upon at the stockholders' meeting, by paying $5 per share for the exchange.

The brave nature never shows itself so grandly as under fire.

A MODERN FACTORY.

A plant of unusual interest, says the Davenport, Ia., Times, is the new factory of the Davenport Wagon Company, at Third and LeClaire streets, which has just been completed. Operations have only recently been started in the shops. The building is of special interest for several reasons, because of the method of construction used in itself, because of the machinery used, and because of the product manufactured there.

A forge shop, with huge machinery, including a large pneumatic riveter, on the third floor of the building, is rarely met with. Yet this is one of the innovations to be found at the Davenport Wagon Company's shops. The building is constructed of reinforced concrete, with floors about eight inches in thickness. J. L. Hecht is president and treasurer of the company; George T. Baker, vice-president; A. W. Vander Veer, secretary.

HARD HIT AND WILL QUIT BUSINESS.

The Rock Island Buggy Company, of Moline, Ill., is soon to become a thing of the past. The factory is now busy getting out a large special order, and when this work is concluded the company will close up its factory and as soon as possible will wind up its affairs.

The company is understood to have been contemplating such a step for some time, but heretofore no definite arrangements have been made to close out the business. The machinery and what stock there is on hand will be sold.

The buggy company is another of the Rock Island institutions hard hit by the panic of a year ago, and it has been operating under difficulties since that time.

CARRIAGE TRADE AWAKENING.

May Control Autos of Buggy Type in the Future.

The belief is entertained, and is being frankly expressed in a number of quarters, that a large part of the automobile business of the future, and particularly that in the buggy type of vehicle, will ultimately fall into the hands of the carriage trade. The correctness of this belief is a matter that must be left to the future, but its frank expression demonstrates that the carriage trade, so long indifferent or hostile to the motor vehicle, has at last awakened to a realization of its permanency.—N. Y. American.

THE TREND IN CINCINNATI.

Is Cincinnati's carriage industry tending toward the automobile business? At least four Cincinnati carriage and buggy manufacturing houses have recently gone into the auto business. The Schacht Company, the Jewel Carriage Company and the Frank J. Enger Carriage Company have embarked in the manufacture of high wheel autos, and the Haberer Carriage Company has just branched out into the manufacture of automobiles. This part of the Haberer business will be known as the Cincinnati Automobile Company.—Cincinnati Times-Star.

BANNER BUGGY CO. CATALOGUE.

The 1909 catalogue of the Banner Buggy Company has just been issued. It is a success both from the viewpoint of the manufacturer and the dealer.

It is the result of months of compilation, and its handsome appearance amply justifies the time spent in its making. It contains ninety pages of cuts with full descriptions of the parts of the various vehicles illustrated. On its introductory page is a statement of the policies of the firm and a short history of the company's growth from a comparatively humble beginning to its present position as one of the foremost vehicle manufacturing establishments in the United States.

Digitized by Google

Timber Conservation

MOST FAMOUS TREES IN THE WORLD.

Signing of Bill for Creation of Calaveras Park Saves Them for All Time.

By signing the bill for the creation of the Calaveras National Forest, California, President Roosevelt completed the legislative act which saves for all time the most famous grove of trees in the world. The people of California, particularly the 500 women of the California Club, have been working to interest the government in this wonderful grove of big trees for more than nine years, but not until now has it been possible to arrange a plan satisfactory alike to the owner of the land and to Congress.

Everyone interested in the great natural wonders rejoices that as a means of saving the big trees the way has been paved for a practical exchange of the timber in the groves for stumpage on other forest land owned by the government. The first Calaveras bill was introduced in the Senate four years ago by Senator Perkins, of California. Bills for the same purpose were passed in the upper house of Congress a number of times, but always failed of favorable consideration in the House until Senate Bill 1574, also introduced by Senator Perkins, was recently called up by Congressman S. C. Smith, of California.

Robert B. Whiteside, of Duluth, Minnesota, a prominent lumberman operating in the Lake States and on the Pacific Coast, is the owner of the Calaveras big trees. After his agreement to the proposals which are simply a practical exchange of timber for timber, the entire California delegation gave its solid and enthusiastic support to the bill. No appropriation is needed to carry out the provisions of the act.

The land to be acquired under the bill includes about 960 acres in what is known as the North Calaveras Grove in Calaveras county, and 3,040 acres in the South Grove in Tuolumne county. The North Grove contains ninety-three big trees, and in the South Grove there are 1,380 of these giant sequoias. Any tree under eighteen feet in circumference, or six feet through, is not considered in the count of large trees. Besides the giant sequoias there are hundreds of sugar pines and yellow pines of astonishing proportions, ranging to the height of 275 feet and often attaining a diameter of eight to ten feet. There are also many white firs and incense cedars in the two tracts. A government study of the land was made by a field party under the direction of Fred G. Plummer, United States Forest Service, in 1906.

The Calaveras big trees are known the world over. The North Grove contains ten trees, each having a diameter of twenty-five feet or over, and more than seventy having a diameter of fifteen to twenty-five feet. Most of the trees have been named, some for famous generals of the United States and others for statesmen and various States of the Union. "The Father of the Forests," now down, is estimated by Hittel, in his "Resources of California," to have had a height of 450 feet and a diameter at the ground of more than forty feet when it was standing. "Massachusetts" contains 118,000 board feet of lumber; "Governor Stoneman" contains 108,000 board feet, and the "Mother of the Forest," burned in the terrible forest fire which licked its way into a part of the grove last summer, contains 105,000 board feet. Each of these trees named grows as much lumber as is grown ordinarily on fifteen or twenty acres of timberland. The bark runs from six inches to two feet in thickness. Among the other large named trees in the two groves are "Waterloo," "Pennsylvania," "James King," "Old Bachelor," "Pride of the Forest," "Daniel Webster," "Sir John Franklin," "Empire State," "U. S. Grant," " W. T. Sherman," "J. P. McPherson," "Abraham Lincoln," "Connecticut," "Ohio," "Grover Cleveland," "Mrs. Grover Cleveland," "Dr. Nelson," "General Custer," "Dr. J. W. Dawson," "General Hancock," "Knight of the Forest," "Two Sentinels" and "Old Dowd."

WISCONSIN UNIVERSITY GETS FOREST LABORATORY.

Force of Timber Test Engineers Will Carry On Work—A $15,000 Equipment to be Installed.

The government's new forest products' laboratory will be located at the University of Wisconsin, at Madison. In naming Wisconsin, Gifford Pinchot, chief of the United States Forest Service, said: "I have had few decisions to make which were so difficult or which have had such prolonged and careful consideration as the decision as to which of the offers for co-operation in establishing and maintaining a forest products' laboratory I should recommend for acceptance by the Secretary of Agriculture."

The establishment of the laboratory means the concentration of all lines of the experimental investigations of the government looking to closer and better utilization of timber and the checking of wood waste. Forest service laboratories for timber test work at Yale and Purdue universities, and the government's wood pulp and wood chemistry laboratory in Washington, will be consolidated and transferred to Madison as soon as practicable. A force of fifteen to twenty timber test engineers, experts in wood preservation, wood pulp manufacture and wood distillation, will have charge of the work carried on. The laboratory will have an equipment valued at not less than $15,000. The university will furnish the building, light, heat and power, and in return advanced students will have the use of the laboratory for special work in related lines.

In announcing the decision to the presidents of the universities which made offers, Chief Forester Pinchot said: "After the generous propositions of the various institutions which were made were all received and considered, those of the Universities of Michigan, Minnesota and Wisconsin were seen to be most advantageous. These three were studied and compared in every useful way we could devise, and at last it was seen that all things considered the proposition of the University of Wisconsin should be accepted.

"The propositions of the three universities as to buildings were substantially equal. In other directions also there was little to choose, while in still others the differences were marked. It would serve no good purpose to set forth the specific details upon which the choice rests. On the contrary, such a course might lead to unfortunate discussion of relative merits leading to no conclusion. I have, therefore, preferred simply to add that among the factors considered, the following were necessarily given special weight:

"1. Building, site and equipment of light, heat and power.

"2. Courses in instruction in forestry, agriculture, engineering and science generally.

"3. General accessibility to the forest regions of the East, Central Valley and South, to the industries most concerned with the work of the laboratory, and to the officers of the forest service on inspection.

"4. Practical research work, especially that done in connection with professional and industrial organizations.

"5. Relation to State and Federal policies affecting the conservation of natural resources.

Digitized by Google

"The laboratory could only go to one of the three universities. Two must be disappointed. For that disappointment I am keenly sorry, but nothing I can do will prevent it. I ask you to accept my heartiest thanks for the generous interest of your university, its president and board of regents, your delegation in congress, and the legislature and people of your State in the advancement of forestry. I congratulate you on the magnificent support you have had, and I am heartily sorry that I cannot recommend in favor of all three."

EFFECT OF EXCESSIVE DEFORESTATION.

"What has been the effect of the tremendous consumption of timber upon our forests?" This question is often asked by people in various sections of the country, and often the information of the average man on the subject is not definite enough to enable him to make a clear and satisfactory answer. R. S. Kellogg, assistant forester, engaged upon statistics in the United States Forest Service, in giving a concise answer to the important question, says:

"Now our annual requirements exceed forty billion feet of timber, one hundred million cross ties, four million cords of pulp wood, besides great quantities of other forms of forest products, such as firewood, posts, poles, mine timbers, etc. The per capita consumption of lumber in the United States was 215 board feet in 1850; now it is 470 board feet.

"One forest region after another has been attacked. With the exception of Maine, the New England States are cutting mostly second or third growth timber. The box factories there take white pine saplings down to six inches in diameter. The so-called 'inexhaustible' white pine forests of Michigan are gone, and millions of acres of cut-over and burned-over land have gone upon the delinquent tax list. Michigan supplied 23 per cent. of the lumber production of the United States in 1880, and less than 5 per cent. of it in 1907.

"The value of the lumber production in Michigan since 1849 has been 50 per cent. greater than the output of gold in California, and it has all taken place without a thought for the future. The cream of our hardwoods is gone, and it is becoming more and more difficult to get in sufficient quantity the high grades of oak, yellow poplar, ash and hickory that our great manufacturing industries require. The South's once great supply of yellow pine is rapidly giving way before axe and saw, fire and tornado. Half a generation more will, in most places, see little but remnants left of the Southern forests, and in that time the Pacific Coast supplies will be heavily drawn upon.

"Ours is primarily a wood-using civilization. Despite the introduction of substitutes for wood in the form of stone, cement, concrete and steel, our consumption of timber has constantly increased from the earliest days up to the present time. The prices of forest products have risen more rapidly than those of other commodities. According to the reports of the Bureau of Labor, the quoted prices of the leading kinds of lumber on the New York market have risen twice as much in the last ten years as the average increase in all commodities. This indicates that the supply of timber is not keeping pace with the demand."

AFFORESTATION IN GREAT BRITAIN.

Great interest is being taken in the report of a royal commission, appointed to inquire into the question of afforestation in the United Kingdom, which is declared by the commission to be both practicable and desirable, writes Consul-General Robert J. Wynne, of London, in his report on the project of planting to timber all lands suitable for the purpose in the United Kingdom. There is also declared to be no valid reason why British soil should not produce most of the timber that is now imported. Competent witnesses do not doubt that the same profitable results can be obtained in England which are obtained from the forests of Germany.

The commissioners report that Great Britain imported in 1907 no less than $160,000,000 worth of timber, of which $100,000,000 worth came from countries of similar character. They declare that there are in the United Kingdom 13,000,000 acres of rough mountain land, of which 9,000,000 acres are suitable for afforestation purposes. What they propose is that 150,000 acres should be afforested every year. This would give temporary employment to about 18,000 men, and permanent employment, when the trees are planted, to 1,500, one man being required for every 100 acres. Thus when the forests were fully established 90,000 men would be permanently employed.

Value of the Matured Forests, Etc.

For the first 40 years the project would involve only expenditure; after that revenue would begin to flow in. In 60 years the forests would become self-supporting, and in 80 years the State would enjoy, after allowing 3 per cent, compound interest on all the money invested, a revenue of $84,730,000, and the value of the property would be $2,735,338,000, or $520,681,000 in excess of the sum involved in its development. It is proposed to meet the capital expenditure by loans from the treasury to the forest commissioners, the annual deficit on administration rising from $438,000 in the first year to $15,238,200 in the fortieth. Apart from the magnitude of the sums to be defrayed by taxation, the chief drawback to the scheme is the length of time which must elapse before a forest begins to pay its way.

In the following table are given the percentages of land occupied by forests in European countries:

Countries.	Per cent.	Countries.	Per cent.
England	5.3	France	17.0
Scotland	4.6	Belgium	17.3
Wales	3.9	Germany	25.9
Ireland	1.5	Hungary	27.5
Denmark	7.2	Austria	32.6
Netherlands	7.9		

Expert witnesses examined by the commissioners with reference to the future scarcity of timber stated that in less than 30 years there would be no timber available unless the different countries of the world should set about replanting immediately, and that if every country should take it up now the regeneration would not be half fast enough to keep pace with the consumption.

TO MAKE THE SNOW FLY.

The present commissioner of the Department of Street Cleaning of New York, Mr. W. E. Edwards, has developed into a unique combination of two formerly famous people, viz., the late Col. Waring, organizer of the present system of street cleaning in the city, which tells its own story, and Col. Davy Crockett, "Be sure you are right and then go ahead." From his management since he took hold it is to be readily seen that he is making every effort to emulate the worthy persons referred to.

The removal of snow from the city streets has ever been a conundrum of mighty proportions. The invention of any machine which applies to street cleaning means communications to the head of the Street Cleaning Bureau. Just how many snow plows, now called reversible road wagons, there are on the market to-day is too complex to answer. However, the inventors and makers have been after the commissioner. The result is that from all over the domain they have been sent in, and were used for removing the snow which fell in the early March blizzard. The snow was moved in rolls and set along near the curb in geometrical precision. All were good.

They are all novelties, and by manipulation of the various steering and hoisting machinery can skim the snow off from one inch to one foot. They can be made to remove a swath of from four feet to eight feet; can be reversed from left to right and vice versa; can be used with two horses and up to six or more horses. The shapes are many. The following are among the competitors: The Austin Co., Climax; Great Western, Marathon and Little Giant, and others.

Digitized by Google

SPECIAL TRADE NEWS FROM MICHIGAN

Newsy Notes by our Correspondent Concerning Well Known Carriage and Automobile Manufacturers in the Wolverine State.

The Michigan Wagon & Manufacturing Co. held its annual meetings in St. Johns, and the condition of the business was laid before the stockholders. The former directors were re-elected with the exception of President A. Cameron, resigned, whose place has been filled by Murrett Frink. Director Potter stated that Mr. Cameron had been extravagant in the management of the business, and neglected it during the past year. His records show that Mr. Cameron had apparently used up about $56,000 worth of raw material in manufacturing wagons, which returned $69,000 with labor, traveling expenses, commissions, salaries, etc., bringing the total cost of the conduct of the business in the past year up to $100,000. Mr. Potter further said that the capital stock probably had been impaired one-half. It will be necessary to add capital. By vote of the stockholders the directors were authorized to take such action as seemed best for the interest of the stockholders. A new set of officers soon will be elected, and a decision will be made as to the continuation or liquidation of the business. It is probable that the business will be continued.

J. P. Beck, vehicle dealer of Saginaw, says that he is much pleased with the outlook for business both in the carriage and the automobile line. Heavy orders for carriages are coming in from Grand Rapjids and Toledo and "Cadillac 30" automobiles are selling rapidly. Mr. Beck is remodeling his carriage factory.

The Reed City Veneer & Panel Co.'s plant at Reed City was burned down on the night of February 7, entailing a total loss of $75,000. The insurance had expired a few days previous.

Sievers & Erdman, carriage and wagon manufacturers, Jefferson avenue and Beaubien street, Detroit, reported to a representative of The Hub that the firm was contemplating the manufacture of electric autos.

"The coach line is very dull," said a member of the firm, "and the best trade at present is in limousines. We are selling out the small line of harness we have been keeping in stock. While trade is not as brisk as it might be, we have over $40,0000 worth of orders in already, and are running full force at the factory and still have our staff of 150 traveling men on the road. It looks to us as if the time would soon come when the automobile manufacturers will have to reduce prices from 30 to 40 per cent. There is a tendency to use very costly materials in the motor car's make-up, and you can't argue the trade out of it yet; but it's bound to come. A carriage man said to me not long ago that he could guarantee to save a single automobile company of Detroit $10,000 a year on the lumber alone, where the concern had used expensive lumber when an inferior article would have done just as well for the purpose. I believe savings also could be effected in the paint, varnish, leather and cloth."

The Columbia Buggy Co., of Woodward avenue, Detroit, is doing a satisfactory business in the sale of delivery wagons and in the general harness line, but other vehicles are sluggish. A good spring and early summer trade is expected.

Dyer P. Thorpe, secretary of H. Scherer & Co., carriage hardware and accessories, saddlery and harness, 284 Jefferson avenue, says that business has improved 25 per cent. over that of last year and 50 per cent. over that of two years ago. "We are having some trade, of course," said he, " but it seems pretty slow to us."

Roehm & Davison, Ltd., Wayne and Woodbridge streets, Detroit, wholesale dealers in carriage hardware and accessories, say that they are obliged to do some pretty sharp scouting to get as much good northern hickory and oak as they need in their extensive business. Auto tops are selling well and so are hubs and axles, and the general hardware trade sustains its volume. Leather prices are high and so is hard wood. Southern timber is not taken readily when there is any hickory in sight.

There is a persistent rumor among the vehicle tradesmen in Detroit that eventually the Buick Motor Co., automobile manufacturers of Flint, will establish headquarters in Detroit as the natural main artery and distributing point for its product. At present there is no confirmation to be had from any member of the company, which is busy contradicting various other reports, among them being one that it has bought the Weston-Mott Co. C. S. Mott, president of the Weston-Mott Co., also has come out with a statement that he owns a large majority of the stock in the concern; that no one has approached him with an offer, and that he has no intention of selling out. He says that his company has delivered to the Buick concern several thousand sets of axles above its needs; that a 60 per cent. addition has been completed and that an addition of 80 per cent. more is contemplated. It is understood that an option on the concern has been secured by the General Motors Co., of New Jersey.

A new $20,000 factory for the Buick Co. will be erected between now and July 1, in Flint, and the contract already has been let. It will be three stories high, 800 feet long and 74 feet wide.

The Michigan Buggy Co., of Kalamazoo, has received notice of its complete victory in a case recently brought by it before the interstate commerce commission against the G. R. & I., Grand Trunk Western, Lake Shore and Chicago, Rock Island & Pacific railroads. An order directing the refunding of a total of $41.50 excess freight charges on two shipments of cutters from Kalamazoo to St. Paul, Minn., was issued. The allegation that the rate was unjust and unreasonable was sustained by the commission, and the order entered also directs the maintenance of a through rate not in excess of 33.5 cents per 100 pounds for the next two years. Chas. E. Stuart, traffic manager, argued the case before the commission at Grand Rapids late last November, appearing against the combined legal talent of the four railroad companies, which delegated six attorneys to represent them.

At a meeting of the directors of the Ionia Wagon Works it was announced that John F. Bible, heavy stockholder and former mayor of that city, had sold his interest in the concern and retired from the business. The deal caused somewhat of a stir, although eventually it had not been entirely unlooked for, in view of the fact that the new directors last fall purchased a controlling interest in the stock. Mr. Bible declined to be interviewed, but admitted that he had been bought out. It is not yet known who will succeed Mr. Bible as secretary and manager of the plant, although it is understood that a movement is under way to secure a competent manager.

The controlling factors of the Ionia Wagon Co. are: John Thwaites, president; Fred A. Chapman, vice-president; A. J. Ashdown, treasurer; C. J. Rumsey, John Greenop and John Thwaites, Jr. The first three are associated with Gen. Fred W. Green in the prison chair factory plants at Ionia and Jackson, and the Thwaites own the Marvel Chair factory in Ionia.

It is said that at the time of Mr. Bible's retirement the busi-

Digitized by Google

ness was unusually prosperous. Five thousand dollars' worth of orders had come in the day before and there are already enough orders on hand to keep 125 operatives busy the balance of this year. The plant is considered one of the best in the country and is equipped with the most modern machinery. When the Thwaites bought the business it was looked upon as a fine proposition. The plant was brought to Ionia about twenty-five years ago, from Lansing. Seventeen years ago Mr. Bible came here from Kentucky and was placed in charge. He bought an interest, and under his management the business flourished. The wagons are shipped all over the world and the plant is valued at $350,000.

Herman Hyde, agent at Grand Rapids for the new Reliance motor truck, reports that there is a big demand for this Owosso product. The car is of the two-cycle, 30 horsepower type, capable of hauling a load of two tons. The company also manufactures three and four-cycle types, which will haul three and four-ton loads.

An unconfirmed report says that the Reliance Motor Co., of Owosso, makers of auto trucks, has been sold out to the Buick Co., of Flint. The story, which is persistent around Griswold street, the "Wall street of Detroit," says that the Buick people have bought up a majority of the stock of the Reliance Co. Vice-President Bentley, of the Reliance Co., declares that the Buick Co. has not a dollar's interest in the concern, although he admits that additional outside capital has been secured for the company.

The Homer Auto Truck Co. has been incorporated at Homer with $12,500 capital, to manufacture auto trucks, drays, delivery wagons and gasoline engines.

The Hudson Motor Car Co., of Detroit, has filed articles of incorporation, giving its capital stock as $100,000.

Allen Wright, aged 68 years, of Ionia, for many years connected with the Ionia Wagon Co., died February 8, from heart disease.

Fred O. Paige, of Detroit, has withdrawn from the Reliance Truck Co., of Owosso, of which he was president.

The Keeler Brass Co., of Grand Rapids, has absorbed the Auto Ball & Equipment concern, of the same city.

A dividend of 10 per cent. has been declared in favor of the creditors of the Dolson Automobile Co., of Charlotte, which went into bankruptcy in November of 1907.

A noticeable feature of the big show given in the Wayne Casino by the Detroit Automobile Dealers' Association was the clever work of the body makers as displayed in the sample cars. They had put their best foot forward, and the designs were graceful and practical. Styles in bodies are changing, and the toy tonneau seems to be the favorite. Some are disposed to call it the "stingy man's car," because the auxiliary seats are dispensed with, but there are doors to the tonneau, weight is saved, and there is really more comfort for the tourist. Colors are in vogue again and the funeral black, shiny auto is growing scarcer. Forty-three local firms exhibited and the estimated value of the exhibits was $1,500,000. The lowest priced car on exhibition was $500 and the highest priced was $7,000.

The following companies have filed articles of incorporation: The K. H. Wheel Co., Detroit, $300,000; Michigan Wheel Co., Sturgis, $100,000; Erd Motor Co., Saginaw, $25,000; Hillsdale Harrow Co., Hillsdale, $25,000; Rush Engine Co., Detroit, $40,000; Northwestern Leather Co., Ishpeming, $8,000; Mechanical Device Co., Detroit, $1,000; Economy Auto Co., Detroit, $1,000, stock divided into $10 shares, of which A. J. Mandel holds ten, C. Zeller thirty-one and A. G. Zeller four.

The Michigan Auto Parts Co. has filed articles of incorporation, fixing the capital stock at $50,000, of which $40,500 is paid in cash. The incorporators and their holdings are: Heatley Green, 2,265; Wm. Hendrie, 1,000; Andrew M. Green, Jr., 250; Edward Ver Linden, 375, and Thomas Costello, 160.

Articles of association have been filed by the Frost Gear & Machine Co., of Jackson, with authorized capital of $35,000, of which $25,000 is paid in cash and property. The stockholders are: Edward J. Frost, Chas. M. Frost, Robert A. Smith, E. L. Weeks, A. S. Glasgow, Thomas Woodfield, D. E. Robinson, W. J. Wowsett and H. D. Wilson. Up to the present the business has been conducted as a co-partnership, consisting of E. J. and C. M. Frost, the company conducting a manufacturing machine business devoted to the production of all forms of gearing and automobile parts. The growth of the business has been so rapid and satisfactory that its incorporation became necessary in order to take care of the increase. The factory is at 301 Clinton street.

INDIANA LETTER.

Indianapolis, Ind., March 1, 1909.

From a manufacturing standpoint, the vehicle business is not very satisfactory in Indiana so far this year. The dealers, however, have little complaint to make and the season promises to be about normal. Manufacturers say the outlook is better for the near future and expect the 1909 business to be equal to that of 1907, that of last year, of course, being about 30 per cent. below normal.

Among the delegates to the National Tariff Commission Convention, held in this city February 16, 17 and 18, were: O. B. Bannister, Muncie, and Homer McDaniel, Cleveland, O., representing the National Carriage Builders' Association; Frank Slosson, of the Bain Wagon Co., Kenosha, Wis.; H. T. Conde, of the H. T. Conde Co., representing the Indianapolis Commercial Club.

The Indiana Society of Chicago will be entertained by J. M. Studebaker, of the Studebaker Mfg. Co., at his home in South Bend, on June 26. Mr. Studebaker will entertain his guests with an automobile ride to Notre Dame University, besides entertaining them at dinner at his home.

"Our February business was much better than that of January," said P. Schneider, who has charge of the vehicle department of the H. T. Conde Co. "The outlook is excellent, and we are anticipating a big business this year." The company has recently added a new repair department.

L. W. Ellinwood, manager of the John Deere Plow Company, in this city, spent the week of February 22 at the company's St. Louis buggy factory, and expected to spend the following week visiting the implement factories at Moline, Ill.

R. M. Page, Special agent for the Moline Wagon Company, Moline, Ill., spent part of February visiting the compan'y travelers and agents in this territory.

The Parry Manufacturing Co. is working full time in all departments, and is anticipating a large business this season. This is one of the few vehicle concerns in Indiana that has not taken up the automobile manufacturing business, preferring to devote its attention to carriages, buggies and wagons.

The Indiana Carriage & Automobile Co., a reorganization of the Indiana Carriage Co., has leased considerable space in the Industrial Building for its automobile storage and repair departments. The company has just received six carloads of carriages, which have been placed on exhibition at the repository, 27-33 North Capitol avenue.

It is reported that the Studebaker Brothers Manufacturing Co., of South Bend, is looking for a site in Indianapolis, where it can erect a building for a sales agency for its line of automobiles and vehicles. It is understood that Frank Staley, who recently disposed of his interests in the H. T. Hearsey Vehicle Co., now the Hearsey-Willis Co., and resigned as vice-president, will have charge of the new Studebaker branch.

Digitized by Google

Among the Manufacturers

Stoughton Plant of Mandt Company to Be Enlarged.—Official announcement has been made by Manager G. H. Carver of extensive improvements this year on the plant of the Mandt Wagon Company, at Stoughton, Wis., a branch of the Moline company. The plans when completed will amount to considerable over $25,000. A new foundry is to be constructed, equipped with modern machinery, covering a space of 80 x 208 feet. Improvements on shops adjoining will add 4,000 square feet floor space. About 150 new employes will be needed, making the total 700. The improvements are to be completed about October 1.

New Hub Factory.—A new hub factory is being installed at Listie, Ark., by E. L. Linker. The capacity at the start will be 400 hubs per day, but will be doubled shortly. Machinery for manufacturing spokes and handles will also be installed.

Good Business for New Concern.—The Copenhaver Carriage Company, with works at Thirty-second and Walnut streets, is a new institution, having been established in January. Business is reported good for the better grade of vehicles, and this company is said to be the forerunner for several others in the same line in this section of Denver.—Denver Republican.

Moved to New Quarters.—The Haase & Bohle Carriage Co., of St. Louis, Mo., has moved into its new building at 3958-3962 Laclede avenue.

Will Rebuild.—It is reported that the Bain Wagon Company, Ltd., of Kenosha, Wis., contemplates rebuilding its entire plant. The work, however, will be stretched out over a period of three years. A portion will be done during the coming spring, as soon as the weather permits. All frame buildings are to be replaced by brick structures.

To Increase Capital.—The Consolidated Wagon & Machine Company, of Salt Lake City, Utah, has under consideration a proposition to increase its capital stock from $1,500,000 to $2,500,000, issuing 10,000 shares of additional stock.

Spreading Out.—In order to take care of its increasing business, the Marshalltown (Ia.) Buggy Company has leased a building for storage purposes.

Now On Ten-Hour Schedule.—The Mogul Wagon Works are now reported running on a ten-hour schedule, and their plant is one of the busiest places about Hopkinsville, Ky. During December and January the company placed large orders for wagons, and with others coming in constantly there is no let up in sight.

Want to Build a Wagon Factory.—A number of parties in Houston are seriously considering the question of installing a wagon factory there, the purpose being to manufacture the wagons out and out. It is stated that the material is there in abundance; that the distributing facilities and general conditions are just suited to such an industry.

New Superintendent.—J. T. Mewshaw succeeds J. T. Jarrard as superintendent of the State Wagon & Carriage Mfg. Dept., at Huntsville, Texas.

Amesbury On a Nine-Hour Basis.—The James N. Leitch Company and the Briggs Carriage Company announce that they will give their employes a nine-hour day on and after May 1, at the present rate of day wages. The firms build automobile bodies and employ 250 men. The concession granted will place the whole automobile business of Amesbury on a nine-hour basis.

To Put Up New Buildings.—The Fort Smith Wagon Works has awarded a contract for the erection of a two-story stone and brick building costing $5,000.

Norman Buggy Co. Organizes.—The Norman Buggy Co., of Griffin, Ga., has organized with $50,000 paid in capital and the following officers: President, W. G. Norman; vice-president, Douglas Boyd; secretary and treasurer, R. H. Weaver. The new two-story building, sixty feet wide and with 210 feet on the railroad, is completed and filled with machinery and turning out from ten to fourteen complete buggies in a day. Some thirty-five skilled hands are employed.

Increasing Wagon Plant.—James Watson & Sons, owners of the Riverview Wagon Works, at Wilmington, Del., are having their plant increased to about six times its present capacity. A three-story building, 30 x 90 feet, has been added and modern machinery is being installed. The number of employees will be increased materially.

Ground Broken for New Factory.—Ground has been broken for the erection of the Agee Wagon Works Factory, at El Dorado, Ark., and the erection of buildings and installing of machinery will be rushed to completion, and it is hoped to turn out the finished material by June 1. The factory will employ over one hundred men with an annual capacity of 5,000 wagons, and has a capital stock of $75,000. The company also acquired the business of the El Dorado Hardwood and Manufacturing Company.

Improving Building and Adding Autos.—H. W. Welland, a carriage manufacturer of 2414-26 Gilbert avenue, Cincinnati, O., plans to tear out the present front and improve the appearance of the building. He also proposes to erect an addition in the in the rear. When these changes are completed Welland will take on the automobile business.

To Build Auto Wagons.—The York (Pa.) Carriage Company has awarded a contract for the erection of a brick addition to its plant, for the purpose of manufacturing auto wagons for commercial trade. Operations will be started about May 1 next.

Prosperity Strikes South Greensburg.—The stockholders and employees of the Parr Wagon Works have felt the return of prosperity to their plant in South Greensburg, Pa. They have enough big orders to run their works till June. During the recent financial entanglement the company was forced to reduce the number of employees, the working hours were reduced from ten to eight hours, and a reduction of wages was put into effect. Now they are working full time again and more men are employed. The men will get an advance about April 1, and then they will be back to where they were before hard times struck them.

To Build New Addition.—Fitzgibbons Brothers are to build a 40 x 100 foot addition to their carriage factory at Monroe, Wis., in the spring. The new plant will be three stories high and will adjoin the present plant on the south. The main floor will be used for painting carriages and automobiles, the second story for storage of wood stock and trimmings and the third floor for store room. The addition has been needed for several years and part of the present plant will be devoted exclusively to sale rooms after the new part is built.

New Jersey Wheel Co. Succeeds the Slack Spoke Works.—Articles of incorporatiion have been issued to the New Jersey Vehicle Co., of Trenton, N. J., which succeeds to the business of the late Wilbur Slack, manufacturer of wheels, spokes and hubs. The concern is capitalized for $50,000. The incorporators are Charles W. Wright, Lemuel Wright and Frank Transue. Charles W. Wright is the agent in charge. The business was established by Wilbur Slack in Frenchtown, N. J., and subsequently moved to Trenton. Mr. Slack's health began to fail some time ago and while on his way to business one Saturday morning he fell to the street and died.

New Factory for Moberly.—Moberly is soon to have a new wagon factory which will be opened in the very near future.

Digitized by Google

Stone Bros. & Co., of Shelbina, Mo., through their representatives, purchased the Weber Implement House. The new owners expect to tear down this frame building, and in its stead put a one-story brick building several times as large as the present one.

Some Factory Figures.—At a meeting recently of stockholders of the Bettendorf Axle Company, Davenport, Ia., reports showed that orders were placed last year for $3,000,000 worth of their product. A new foundry costing $400,000 is to be built the coming season, in which 300 men will be employed. Last year was the most prosperous in the company's history.

Will Enlarge Force.—The Stratton Carriage Co., of Muncie, Ind., announces that it is about to increase its working force and build an addition to its plant, owing to the numerous orders received for the automobile it is manufacturing. The Stratton machine has beautiful lines and is declared to be built with the idea of practicability. The wheels are somewhat similar to those on a buggy, but are of smaller diameter and more solid. Solid tires are used.

Iowa Wagon Company Organized.—The Iowa Wagon Company has been organized at Shenandoah, Ia., to take over the business of the Iowa Wagon Works. The new company has secured from the trustees for the bondholders a lease on the plant with a year's option of purchase and has also purchased all of the material on hand. Those interested in the new concern are: J. W. Perry, of St. Louis; E. A. Read, J. H. Eischied and J. J. Doty, of Shenandoah

Booked Ahead.—The Wisconsin Carriage Co., of Janesville, Wis., claims to be booked ahead on orders enough to keep the factory working till July 1, when the trade usually reaches the lowest mark. For some three weeks the plant has been running a night shift in addition to the regular force, and it is expected that the night gang will be kept at work for at least three months more.

A Busy Town.—Every vehicle factory in Evansville, Ind., is reported as being flooded with orders. The Hercules Buggy Co. is laboring strenuously to fulfill its orders and the wagon company and implement works are working to the limit of their capacity. More men are occasionally being added to the forces of the various shops to accomplish the work and extra hours are being resorted to.

The Pekin (Ill.) Wagon Company has resumed operations after a shut down of several months.

OBITUARY

Wm. H. Bennett.

William H. Bennett, a retired carriage manufacturer, died of a complication of diseases March 2, at his home, No. 99 Cumberland street, Brooklyn, N. Y. He was born in Queens, L. I., sixty years ago, and left a widow, two sons and two daughters.

James J. Fetzer.

The death of James J. Fetzer, of the Herbrand Co., Fremont, Ohio, occurred Tuesday, February 10, at his home at Columbiana, Ohio, after an illness of several weeks. He was 57 years old. Mr. Fetzer was a familiar figure at the C. B. N. A. conventions, and was highly esteemed for his geniality and sterling qualities. He is survived by one brother, Allen Fetzer, of Galion, Ohio; two sisters, Mrs. Jos. Bonnet, of Coshocton, and Mrs. D. C. Strickler, of Luray, Va.

Chris. Sturdy.

Chris. Sturdy, secretary of the Jess & Sturdy Carriage Co., Springfield, Mo., died February 3 of malarial fever, aged 52 years. His wife, son and two daughters survive him.

Louis Rose.

Louis Rose, of Newburgh, N. Y., died February 17 after a brief illness, aged 91 years. He was an active man for his years and up to a few years ago he was engaged in the wagon making business at West Newburgh. He is survived by two daughters and one son and also by several grandchildren.

William S. Wearn.

William S. Wearn, of Charlotte, N. C., died February 12, after a lingering illness of nearly ten weeks. Mr. Wearn was by trade a carriage manufacturer. From boyhood up to the beginning of his last illness he was actively engaged in this work. He established a business for himself and had his stand at the corner of Sixth and North Tryon streets.

Leartus Terwilliger.

Leartus Terwilliger died in his home in Middletown, N. Y., February 25, at the age of 70 years. He was one of the best known manufacturers of wagons and carriages in that section. Mr. Terwilliger was born in the town of Wallkill in 1838. He was a son of Mr. and Mrs. Ira Terwilliger. For the greater part of his life he conducted a wagon making establishment at Circleville. About eighteen years ago he removed to Middletown and conducted a wagon making shop there.

John H. W. Doubler.

John H. W. Doubler, a pioneer wagon maker who settled in Stephenson county, Illinois, nearly sixty years ago, later moving to Warren, where he had a large relationship, died on the night of February 23, at the home of his son-in-law, George F. Kellogg, Chicago, where he had made his home for a number of years. Complication of diseases and old age caused his demise. His remains were taken to Freeport for interment.

W. H. Walburn.

W. H. Walburn, aged 52, of the firm of Walburn & Riker, one of the largest pony carriage manufacturers in the United States, died at St. Paris March 5.

John L. Steck.

John Louis Steck, a wealthy carriage and wagon manufacturer, died at his home in Jersey City on March 7, aged 47 years, from tuberculosis.

Alexander White Lytle.

Alexander White Lytle died at the residence of his daughter, Mrs. Ellen Weitzel, No. 192 Industry street, Allentown, Pittsburg, at the age of 89. Mr. Lytle was born in County Derry, Ireland, came to Pittsburg in 1845, where he engaged in the wagon making business. Surviving are his daughter, Mrs. Ellen Weitzel, and two sons, W. J. and Thomas B. Lytle, all residents of Pittsburg.

J. W. Reeve.

John W. Reeve, who for more than twenty-five years conducted a carriage factory in Wilmington, Del., died from heart failure at the home of his son-in-law, W. K. Harris, in Coatesville, Pa., March 3. He leaves two sons and one daughter. His wife died about fourteen years ago.

John George Schwartzkopf, among the wealthiest residents of Columbus, died at his home in that city February 11. He was 74 years old, and was born in Germany. About fifty years ago he established a wagon manufacturing plant at Columbus, which he conducted until a few years ago, when he engaged in the hardware and retail vehicle business.

A new type of body has been designed by Emerson Brooks, a member of the Automobile Club of America of New York City. The most novel feature of this body is the inclined floor in the tonneau, which relieves the tension on the ankles of those riding in the rear seat.

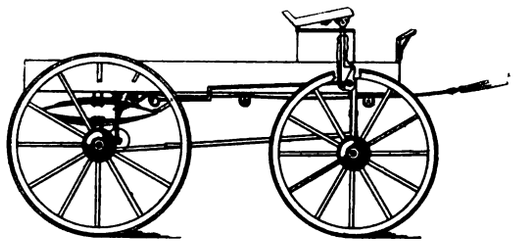
Twenty-three thousand cubic inches of baggage space is provided. Four large suit cases fit into a compartment under the rear seat, which is higher than the front seat, to give an unobstructed view, and this compartment is made so as to exclude dust and water. The unusual body is being made by Quinby & Co., of Newark, N. J., and is to be mounted on a "50" Simplex.

Digitized by Google

Recently Granted Carriage Patents

Automatic Hitching Device for Teams. Ewing Brownfield, of Oklahoma, Okla., assignor of two-thirds to Charles W. Eisenbeis, of Oklahoma, Okla. No. 903,445. Patented Nov. 10, 1908.

This invention relates to hitching devices for teams in connection with vehicles, in which a rope-winding drum is mounted upon a shaft positioned parallel with the rear axle of the vehicle, one end of said shaft having secured thereon a pinion adapted to engage a toothed wheel secured upon one of the rear hubs, to rotate said drum and wind up the rope provided with auxiliary



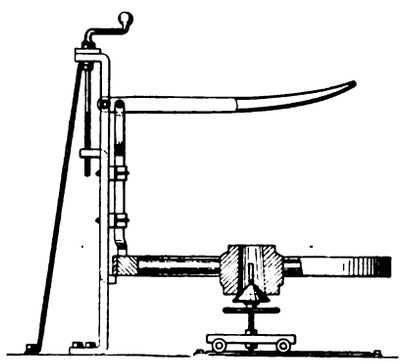
reins secured to the ordinary reins which guide the team; the said device possessing the novel construction of being thrown into operative position by the driver rising from the seat.

In operation, the auxiliary check-reins are snapped into the rein buckles or rings for that purpose, of the ordinary reins; as the driver sits upon the seat his weight presses it down upon its support, at the same time the wedge portion of the operating bar presses the roller forward, including the operating rod, causing the bell-crank to assume a position in which the vehicle is active and the device is out of gear. As the driver arises from the seat, a spiral spring forces the shaft longitudinally and the pinion into gear with the toothed wheel upon the wheel hub. In this position the vehicle is at a stand, and any forward movement causes the drum to wind the rope and draw the horses' reins taut, thus preventing them from going forward, while any rearward movement relieves the rein tension. To accommodate reachless and cut-under vehicles the operating rod is provided with an upward offset.

Tire Remover. William F. Hubbard, of Bakersfield, Cal. No. 903,820. Patented Nov. 10, 1908.

This invention relates to improvements in devices for separating the felloe of a wheel from the tire thereof.

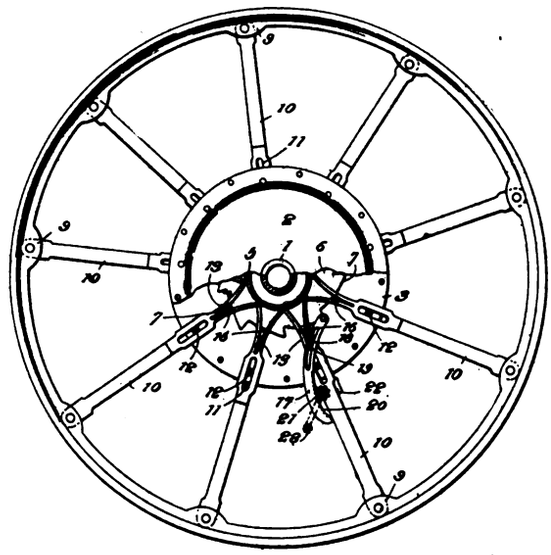
One of the claims is in a tire remover consisting of a standard formed with a slot which extends therethrough; an operating



lever fulcrumed in said standard; a felloe push-bar connected with said lever and mounted free to slide relatively to said standard; a tire supporting bar slidably mounted in said slot and formed at its lower end with a step which projects forwardly from out of said slot and with ears which extend laterally from said step and bear against the front of said standard, one on each side of the slot therein, said step projecting beyond said ears and said ears being adapted and designed to prevent said tire-supporting bar from being forced rearwardly out of said slot; and an adjusting screw supported in the upper end of said standard and having its lower end in engagement with the top of said tire-supporting bar.

Spring Wheel. Alfred Larson. No. 910,396. Patented Jan. 19, 1909.

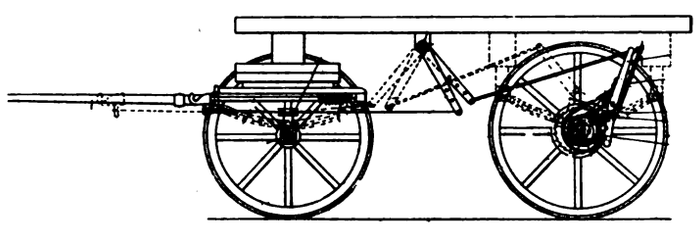
This invention relates to the construction of wheels of that type which derive the required resiliency from metallic springs,



which are so arranged as to absorb all shocks and jars and prevent the same from reaching the axle or body of the vehicle. The object of the invention is to provide a wheel embodying a peculiar construction and arrangement of the spring members which permits of the resiliency being regulated to accommodate the wheel to light or heavy loads.

Starting Device for Wagons. William H. Stewart. No. 908,514. Patented Jan. 5, 1909.

This invention relates to appliances for wagons and other vehicles for the purpose of starting heavy loads, and has for its object to provide the running gear of the vehicle, having freely revoluble wheels, with means for positively rotating any one or more of said wheels, and also for providing means for connecting the actuating means with the draft appliance whereby



it may be operated by the horse or horses to positively rotate the wheels and thereby start the load.

The invention consists essentially in a ratchet clutch mechanism connected with one or both of the wheels, an actuating lever connected therewith, which is adapted to be operated in turn, to in turn operate the clutch and positively rotate the wheel and means for connecting said actuating lever with the

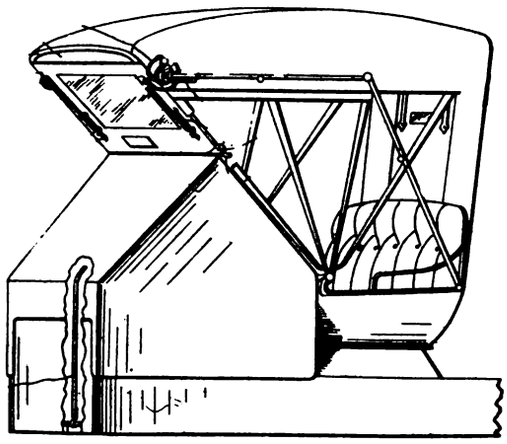
Digitized by Google

draft appliance, whereby it may be operated by a forward movement thereof.

Storm Front for Vehicle. George W. Scott. No. 909,237. Patented Jan. 12, 1909.

This invention relates to improvements in storm fronts for vehicle, the object being to provide a storm front which can be quickly and easily placed in position or removed.

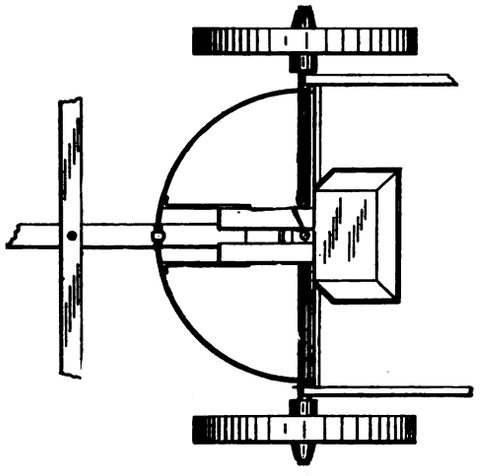
When it is desired to place the storm front into position for use, the frame will be pulled down against the tension of side



springs, and an apron attached to the lower end of this frame, the frame having the lower ends of the side rods b2 b4 bent into hooks d1 adapted to engage with hoops, d2, on the apron d; this apron being attached to the dash and toe rail of the vehicle in any suitable manner. When the storm front is drawn downwardly to its position and the springs thereupon placed under tension, there is a tendency for the coils of the springs to be thrown inwardly against the vehicle top. To overcome this the inventor has located on each of the supporting studs an upwardly extending arm having a hook-shaped end, offset inwardly and adapted to engage the outside coil of the spring c. This device not only holds the spring in its proper position, but also provides means for adjusting the tension of the spring, and moving the arm about the stud in either direction so as to cause its hook-shaped end to engage the coil of the spring at different points.

Support for Wagon Tongues. Frederick Trost. No. 910,745. Patented Jan. 26, 1909.

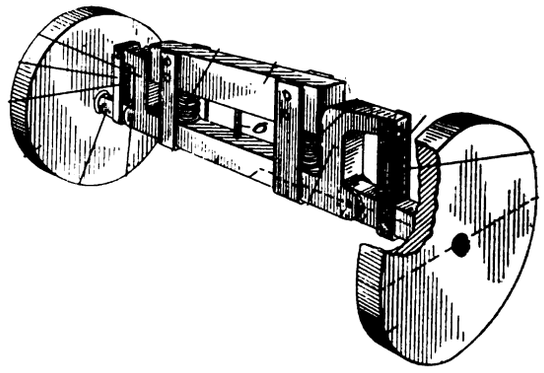
This invention relates to supports for wagon tongues, the object being to provide a resilient support for a wagon tongue or



pole, the point of application of such support to said tongue being intermediate between its free end and its connection to the front axle, with the intention of removing the weight of said tongue from the horses.

Vehicle Axle. Thomas D. Jones. No. 908,572. Patented Jan. 5, 1909.

This invention relates to axles for vehicles, and has for its object to provide an axle or supporting structure which will



serve the purpose or function of a pneumatic or other resilient tire, the wheels being solid or ordinary wheels, the axle being made in sections hinged or pivoted together to bend or yield vertically, springs being interposed to cushion the action.

Running Gear for Vehicles. Jesse H. Hand. No. 909,086. Patented Jan. 5, 1909.

This invention is a running gear for vehicles, the object of the improvement being to provide means of suspending the

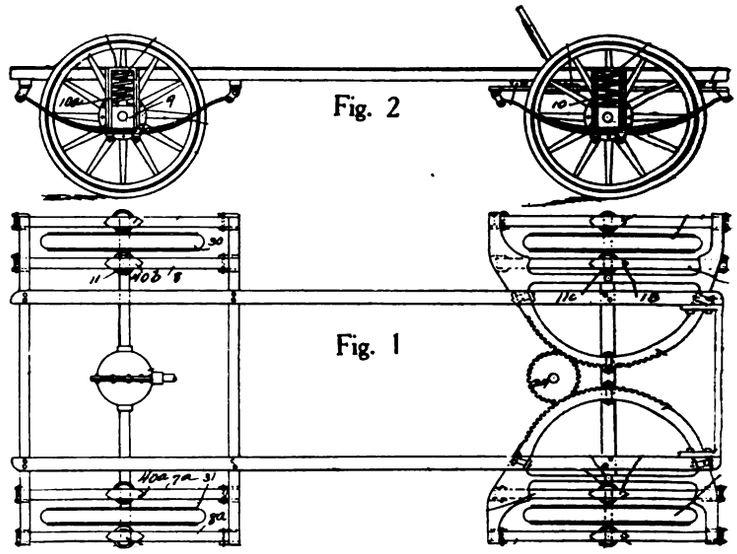


Fig. 2

Fig. 1

vehicle running gear on the wheels and improved means of mounting the wheels to enable the vehicle running gear to be turned or guided. The construction of the running gear will be clearly obvious from the illustration.

The above patents were reported for The Hub by C. L. Parker, solicitor of patents, McGill Building, Washington, D. C.

RECENTLY GRANTED PATENTS OF INTEREST TO THE CARRIAGE AND MOTOR TRADES.

910,633—Brake Mechanism. G. S. Ackley, Buffalo, N. Y.
910,634—Felly Polishing Machine. O. Allen, Mount Morris, N. Y.
910,768—Automobile. N. M. Anderson, Bedford, Ind., assignor to Buggy Car Company, Cincinnati, Ohio.
910,772—Guard or Screen for Motor Road Vehicles. O. T. Banks, London, Eng.
910,788—Whiffletree and Trace Connection. G. A. Crow, El Dorado, Ark.
910,510—Vehicle Axle. D. Davis, Wichita, Kan.
910,997—Wagon Brake. G. Ennis, Ridgeway, Mo.
910,679—Safety Seat Fastener. J. A. Heintz, Menomonie, Wis.
910,694—Wind Shield for Vehicles. J. V. Laddey, Arlington, N. J.
910,946—Vehicle Brake. J. C. McNees, West Liberty, Pa.
910,863—Shock Absorber. G. R. Rogers, New York, N. Y.
910,733—Vehicle Wheel Rim. E. C. Shaw, assignor to B. F. Goodrich Company, Akron, Ohio.
910,868—Vehicle Wheel Rim. E. C. Shaw, assignor to B. F. Goodrich Company, Akron, Ohio.
910,869—Vehicle Wheel Rim. E. C. Shaw, assignor to B. F. Goodrich Company, Akron, Ohio.
910,592—Vehicle Coupling. J. Sieh, James, S. D.
910,745—Support for Wagon Tongues. F. Trost, Dunkerton, Iowa.

Digitized by Google

910,974—Shock Absorber. T. Veitch, Dumont, assignor to International Patent Corporation, Jersey City, N. J.
910,612—Vehicle Wheel. G. Vinet, Neuilly-sur-Seine, France.
911,024—Wagon Seat. N. Beatty, Madison, Ind.
911,203—Tire Shield. J. Burmeister, Spirit Lake, Iowa.
911,212—Cart. T. E. Daly, Springfield, Mass.
911,480—Starting Device for Automobiles. R. E. Drachenberg, Detroit, Mich.
911,301—Wagon Bed Protector. G. I. Fornwalt, Warrensburg, Ill.
911,489—Steering Gear for Automobiles. G. Geer, Richmond, Va.
911,403—Rim Tightener for Vehicle Wheels. J. Hamilton, Weir, Kan.
911,041—Pneumatic Tire. E. J. Hicks, Indianapolis, Ind.
911,240—Frame Section of Vehicle Running Gear. G. Higley, assignor to Cleveland Hardware Company, Cleveland, Ohio.
911,402—Shock Absorbing Mechanism for Vehicle Springs. W. P. Kidder, Boston, Mass.
911,309—Whip Lock. W. G. Lieser, Bolivar, Ohio.
911,142—Vehicle Axle. R. C. Martin, Chapman, Neb.
911,143—Vehicle. R. N. Martz, Frederick, Md.
911,151—Vehicle Spring. M. M. McIntyre, assignor to Perfecting Spring Company, Cleveland, Ohio.
911,425—Wheel Rim. F. C. Miller, Easton, Pa.
911,427—Chain Mat for Wheel Tires. B. J. Morehouse, assignor to G. C. Walker, Granville, N. Y.
911,257—Tire. L. M. Nelson, Douglas, Wyo.
911,182—Tire Mold. P. D. Thropp, Trenton, N. J.
912,232—Lamp for Motor Road Vehicles. C. Davis, London, Eng.
911,709—Steering Device for Vehicles. E. E. Evans, Branchport, N. Y.
911,715—Bumper for Vehicles. H. H. Gardner, Santa Ana, Cal.
912,119—Vehicle Wheel. G. A. Gustafson, Church's Ferry, N. D.
911,984—Tire Protector. G. C. Hoskin, Le Mars, Iowa.
911,881—Wheel Guard. C. Johnston, Boyes, Mont.
912,003—Speed Recorder. G. A. Lee, assignor, by mesne assignments, to Recometre Company of America, New York, N. Y.
911,826—Vehicle Wheel. N. G. Long, Elberton, Ga.
911,897—Thill Coupling. T. A. Moran, Mankato, Minn.
912,189—Carriage and Wagon Running Gear. R. B. Sheridan, Knoxville, Tenn.
912,190—Bolster and Standard for Wagons. C. M. Shotwell, Fossil, Wyo.
911,775—Thill Support. S. H. Story, Naples, Texas.
911,777—Steering Head for Automobiles. H. C. Stutz, Indianapolis, Ind.
911,922—Hub. M. S. Towson, Cleveland, Ohio.
911,633—Wagon Loading Device. J. K. Voorhees and V. V. Speer, Cedar Falls, Iowa.
912,438—Vehicle Wheel. M. M. Bailey, Springfield, Ohio.
912,278—Buggy Top Lock. A. L. Blalock, Madison, Fla.
912,798—Motor Vehicle. S. R. Brainard, East Waterloo Township, Blackhawk Co., Iowa.
912,800—Wagon Reach. H. Braun and G. L. Wackerow, Mellete, S. D.
912,537—Securing Device for Tire Retaining Flanges. R. S. Bryant, Columbus, Ohio.
912,943—Cushion Tire for Vehicle Wheels. E. J. Duff, Liverpool, England.
912,369—Brake Shoe for the Wheels of Vehicles. J. Earlam, Stockport, and J. Wild, Blackley, Eng.
912,461—Draft Equalizer. N. Fryman, Bowdon, N. D.
912,205—Resilient Wheel. A. F. Glaser, Jersey City, and J. Olson, Whippany, assignors of one-third to G. W. Crane, Rahway, N. J.
912,840—Wagon Body. W. Graham and C. S. Baker, Buffalo, Wyo.
912,684—Clip for Vehicle Springs. R. Jardine, Cleveland, Ohio.
912,585—Hygienic Wagon and Portable Furnace. D. Mandel, Nyirbator, Austria-Hungary.
912,399—Automobile Tire. F. E. Modlin, South Sioux City, Neb., assignor of one-half to F. H. Durgin, Le Mars, Iowa.
912,483—Shock Absorber for Automobiles. J. C. Murdock, Broadhead, Wis.
912,725—Pneumatic Tire. G. J. Paynter, Philadelphia, Pa.
912,615—Wheel. R. W. Pringle, London, Eng.
912,489—Controlling Mechanism for Motor Vehicles. W. F. Richards, Buffalo, N. Y.
912,736—Variable Speed Driving Mechanism. R. M. Ruck, London, England.
912,627—Wheel. B. C. Seaton, Detroit, Mich.
912,424—Running Gear. W. Shaw, West Allis, Wis.
912,429—Foot Rest for Vehicles. A. E. Smith, South Bend, Ind.
912,430—Wagon Body. J. T. Smither, Morgadore, Ky.
912,749—Shock Absorbing Apparatus. W. H. Son, Wilkes-Barre, Pa.
912,911—Wind Shield. J. H. Sprague, Norwalk, Ohio.
912,758—Wheel. T. J. Thorp, Corvallis, Oregon.
912,919—Wheel. T. J. Thorp, Corvallis, Oregon.
912,759—Attachment for Vehicles. C. Todd, Pittsburg, Pa.

Copies of above patents may be obtained for fifteen cents each by addressing John A. Saul, solicitor of patents, Fendall Building, Washington, D. C.

RECENTLY EXPIRED PATENTS OF INTEREST TO THE CARRIAGE TRADE.

Patents Expired Jan. 19, 1909.

467,204—Vehicle Spring. P. C. Schwalen and J. M. Powers, Minneapolis, Minn.
467,206—Machine for Boring Hubs. C. Seymour, Defiance, Ohio.
467,210—Two-Wheeled Vehicle. H. C. Swan, Oshkosh, Wis.
467,223—Whiffletree Attachment. F. J. Blanke, Cold Spring, Wis.
467,279—Fifth Wheel Device for Wagons. G. R. Kent, Burlington, Wis.
467,376—Vehicle Spring. T. S. King, Cincinnati, Ohio.
467,395—Thill Support. L. T. Bow, Glasgow, Ky.

Patents Expired Feb. 2, 1909.

467,939—Dumping Wagon. A. E. Lawrence, Danville Junction, Me.
468,019—Whiffletree Hook. N. F. Reed, Hyde Park, Vt.
468,196—Pneumatic Tire. W. E. Foster, Bermondsey, Eng.
468,220—Hub. J. H. Coyle, Albany, and E. B. Coyle, Ballston Spa, N. Y.
468,234—Vehicle Spring. B. H. Booth, Kirkwood, N. Y.
468,237—Draft Equalizer. E. T. Carter, Morrison, Ill.

Patents Expired Jan. 26, 1909.

467,526—Metallic Pole. S. H. Terry, St. Louis, Mo.
467,566—Whiffletree Hook. W. F. White, Troy, N. Y.
467,601—Whiffletree. J. H. Irion, Pawnee City, Neb.
467,805—Spring Seat Attachment for Vehicles. J. W. Haney and Wm. A. Owens, Garden Valley, Tex.

The above lists of patents, trade marks and designs of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City.

REVIVAL OF "KITE BOAT" SAILING.

Contrary to the general impression the sport of sailing a boat in tow of a kite, which was tried recently on Lake Ontario by the Baron Victor de Fleurville and Howard L. Ropes, is not an innovation. It is merely a revival of an old recreation originated thirty-three years ago by Major W. W. Harral, of Fairfield, Conn., says a writer in the N. Y. Herald.

It was in 1876 that the major first conceived the idea of using a kite as the motive power for boats in place of sails, and of utilizing the same when the wind might be favorable, not only in trolling for fish but in making excursions to distant points. Major Harral lived in Bridgeport at that time and spent a good portion of his spare time in fishing and boating on Long Island Sound. When he mentioned his idea to friends, however, there were many who ridiculed it as quixotic and when he proposed to cross Long Island Sound in a "kite boat" these persons regarded the undertaking not only as foolhardy but impossible.

Undaunted by opposition, however, or the danger predicted by both friends and critics, Major Harral went right along with his preparations, and early in July, 1876, he completed a kite of proportions which he deemed suitable for the purpose of towing a boat.

As constructed the kite was simply an enlarged copy of that which is familiar to every schoolboy. In height it was eight feet and in width five. The cross pieces were of stout hickory, about an inch in diameter, and were firmly screwed in the center, from which point they gently tapered to the ends, through which the usual brace lines were passed. Stout cotton cloth in the place of paper, a properly weighted tail and an ordinary codfish line, eight hundred feet in length, constituted the rest of the equipment.

After a personal trial of the kite as a motive power for a boat Major Harral invited a representative of the Herald to make a voyage across the Sound with him. The start was made from the picturesque beach in front of the old George Hotel at Black Rock, a well known harbor for coasters, and directly opposite Port Jefferson.

For the purpose of testing the power of the kite, the wind and the craft, one of the best sail boats in the vicinity was secured by a party of "doubting Thomases" who challenged Major Harral to a race across the Sound. The major accepted the challenge and conceded to his competitors a start of nearly three-quarters of a mile. The breeze was so strong that the latter moved off under a double reef. In the kite boat the only preparation needed was the firm attachment of the thin line, one-eighth of an inch in diameter, to the bow, a point in the direction of the wind, and the words "Let go!" The little vessel dashed off like a race horse, marking her speed with a long line of foam. In the land-locked harbor it was smooth sailing. The danger and the speed were nothing.

A little more than an hour sufficed to show, however, that the kite, small as its area was compared with the huge mainsail of its rival, was the winner by long odds of the race. It took only two hours and fifty minutes for the kite boat to cover the twenty-two miles to Port Jefferson, which was the finishing point of the race. When she arrived there her competitor was fully two and a half miles distant and nearly hull down.

The success of Major Harral's experiment with the kite as motive power for a boat inspired him at the time to forecast several possibilities, not one of which, however, has as yet been put into practical use. One of these possibilities was that kites might be made useful in the event of shipwreck and be made instrumental in towing the passengers and crew ashore or serving as signals with lights attached at night to distant ships.

Digitized by Google

Trade News From Near and Far

NEW FIRMS AND INCORPORATIONS.

McInch & Zook will engage in the vehicle and implement business in Auburn, Neb.

Alexander & Guthrie will engage in the vehicle and implement business in Syracuse, Neb.

The Schulenborg & Beck Co. has been incorporated in Tipton, Ind., with a capital stock of $15,000, to do a vehicle and implement business.

The Dyersburg Vehicle & Implement Co. has been incorporated in Dyersburg, Tenn., with a capital of $5,000.

The Hogland Wagon Co. has been incorporated in Kansas City, Mo., with a capital stock of $75,000.

Noto Bros. have engaged in the vehicle and implement business in Bryan, Tex.

The Santa Barbara Carriage & Implement Co. has engaged in business in Santa Barbara, Cal.

Wm. Hasbrouck has engaged in the vehicle and implement business in Hazelton, Ia.

Ratzlaff & McDonald will open a new stock of vehicles, etc., in Fairview, Okla.

Tait & Kleinpel will engage in the vehicle business in Millville, Ia.

The Universal Automatic Wagon Brake Co. has been incorporated in Oklahoma City, Okla., with a capital stock of $5,000.

The Gopher Top & Hardware Co. has been organized in Minneapolis, Minn., and will engage in the sale of buggy tops and trimmings.

F. F. Layton & Son have engaged in the vehicle and implement business in Silver Creek, Neb.

Wm. McKinley & Co. have incorporated with a capital stock of $10,000 in Monmouth, Ill., and will handle implements and automobiles.

G. E. Clause, Sherburn, Minn., dealer in vehicles, etc., has discontinued business.

Decker & Sontag have engaged in business in Chilton, Wis. They will handle vehicles, implements, etc.

The Gustav Schaefer Carriage & Wagon Company has been incorporated with a capital stock of $75,000 at Cleveland, O.

The Covington (Ga.) Buggy Company, recently organized to manufacture buggies, has elected the following officers: President and general manager, John M. Wright, of Griffin; secretary and treasurer, Dr. N. Z. Anderson.

The Parker Mfg. Co., Suffolk, Va., has been incorporated to manufacture, assemble and repair vehicles of all kinds, including automobiles, buggies, carriages and wagons. The capital stock is from $30,000 to $50,000. B. E. Parker, of Franklin, Va., is president.

The K. H. Wheel Co., Detroit, Mich., has been organized to manufacture wheels for vehicles, capital $300,000, by William H. Ducharme, Harry J. Herbert, John Kelsey and others.

The Borchers Carriage Co., of Dayton, O., has decided to dissolve and surrender its charter.

The Ferguson, Clancy & Reule Company has been organized at Ypsilanti Mich., to manufacture carriages, wagons and sleighs. Capital, $16,000. No names given.

Ed. Griffin has opened a carriage paint shop at Madisonville, Ky., in the building formerly occupied by the Patterson Wagon Works.

McGirr Manufacturing Co. has been incorporated at DeKalb, Ill., to manufacture wagons and machinery, capital $10,000, by John McGirr and others.

The Covington (Ga.) Buggy Company elected officers for the new corporation. John M. Wright, who has been made president and general manager, is from Griffin. Dr. N. Z. Anderson was chosen secretary and treasurer, and Dr. J. T. Gibson vice-president. The new manufactory will occupy the building recently vacated by the Norman Buggy Company.

W. D. Smith Co., carriages and harness, Bangor, Me., capital $10,000, has been incorporated. President and treasurer, W. D. Smith; clerk, H. T. Gallagher.

The Gibb Spring Motor Tire Company, Little Rock, Ark., has been formed for the purpose of manufacturing spring tires and wheels for automobiles and other vehicles. Capital, $100,000. Fred Newton Gibb, president; W. E. Green, vice-president; Frank W. Gibb, secretary.

L. S. Keeter, of Salisbury, has leased the plant of the Forest Hill Buggy Co., at Concord, N. C., and will operate it.

Peters Brothers will begin the manufacture of wagons at Findlay, O.

CHANGES.

Meyer Bros. have been succeeded in the vehicle and implement business in Genessee, Ida., by Meyer & Flower.

R. J. Stephens has sold his vehicle and implement business in Almira, Wash., to Frank Irwin.

J. H. Hall has succeeded to the vehicle and implement business of King & Hall, in Scotts Bluff, Neb.

George Shostrum has purchased the implement and vehicle stock of the Farmers' Department Store, in Gothenburg, Neb.

The Consolidated Wagon & Machine Co., of Salt Lake City, Utah, has established a branch in Gooding, Ida.

The Sturgis Wheel Works, known as the Western Wheel & Hardware Company, at Sturgis, Mich., and operated by the F. B. Canode Co., has been reorganized and reincorporated as the Michigan Wheel Company, with a capital stock of $150,000.

Miles Bonds, of Chickamauga, Ga., has bought the interest of G. P. Poole in the Hamilton Buggy & Implement Company, Chattanooga, Tenn., and will immediately move to that city and take an active part in the conduct of the firm's business.

George W. McNear has taken entire control of the old established business of the firm of Quinsler & Co., of Boston. Mr. McNear has been associated with the firm for a number of years, and since the automobile came into vogue he has been making a specialty of automobile bodies, and he is now sole proprietor of the business which he did so much to develop.

A. P. Aller, of Winnebago, Wis., has purchased the interests of the late Fred Van de Water in the Wisconsin Carriage Company, of Janesville, Wis. He will take an active interest in the management.

Henry L. Oswald has purchased the implement, vehicle and harness stock of the Hanover Brokerage Co., in Hanover, Kan.

G. M. Dyer has sold his stock of buggies, implements and harness in Terril, Ia., to John Townsfeldt.

Otto Laushman has purchased the vehicle and implement business of Studeng & Maly, in Verdigris, Neb.

P. Stephon has sold his vehicle, implement and furniture business in Baltic, Ohio, to E. B. Stephon.

John P. Chapman has sold his vehicle and implement business in North Salem, Ind., to Davis & Hadley.

P. A. Sanborn has purchased the stock of buggies, etc., of Geo. Wilcox, in Gretna, Neb.

Tunberg & Anderson have purchased the vehicle and implement business of Larson & Engdahl, in Wausa, Neb.

T. G. Hyde & Co. have succeeded McCullolugh & Hyde in the implement and vehicle business in Humeston, Ia.

Digitized by Google

Mr. W. R. Hunter, a first-class carriage and automobile smith, *has* gone into business with Mr. I. J. Lamb, at Cordele, Ga., under the name of The Cordele Carriage Works.

Owing to the dissolution of the vehicle and implement firm of Tatum & Shafer, in Kinsley, Kan., Mr. Tatum will continue alone.

S. W. Hill & Co. have sold out their stock of vehicles, etc., in Osage, Ia., to A. H. Elver.

S. S. Forrest has purchased the vehicle and implement business of Cunningham Bros., in Walnut Springs, Tex.

Bert Ibach has purchased a half interest in the vehicle and implement business of L. A. Collins, in Eldora, Ia.

George Kruse has sold his vehicle and implement business in Bremen, Kan., to Fred Garmer.

L. T. Suiter has purchased the implement and vehicle business of Davis & Son, in Lowry City, Mo.

Winn & Claus have purchased the business of J. A. Workman, in Udell, Ia., and will add vehicles.

Redler & Childs have purchased the vehicle and implement business of L. M. Thomas, in Albion, Neb.

W. Flint has sold his carriage and implement business in Hastings, Neb., to Cora Glazier.

The plant of the Forest Hill Buggy Company, Concord, N. C., recently bought by Charles McDonald, has been leased by L. S. Keeter, of Salisbury, who will take charge at once and operate the plant.

Poland & Burris sold their implement and buggy business at Bethany, Mo., to Moore, Adams & Co., of King City

The firm of T. W. Buchanan & Co. and the Lyon Buggy Company, of Campbellsville, Ky., have consolidated and expect to do a general jobbing business on all kinds of implements, vehicles, saddlery and harness.

C. A. Bailey, of Chatham, N. Y., has succeeded to the implement and wagon business of Bailey & Tracy.

A. M. Gatchell has purchased the Norwood (O.) Carriage Factory, and will carry on the business.

After conducting the Line Lexington Carriage Works, at Doylestown, Pa., for forty-three years, John G. Barndt will retire from business, having disposed of the same to George Kister, who has been with the concern for twenty-one years.

Coyne & Collins have purchased the wagon shop owned by the Walter Galbreath estate, at Cambridge, N. Y.

The Birmingham (Ala.) Carriage and Wagon Company is the style of a new corporation which has purchased the business of the B. H. Summers Carriage Company, and will conduct it in future. The officers of the new company are George H. Brummell, president, and C. H. Hostetter, secretary and treasurer. Both gentlemen are from Anniston, where they have been engaged in the same business.

Bradley Allen will remove his carriage shop from Cornish to Portland, Me.

William T. Henderson, the carriage builder of Somerville, has moved to 93 Cambridge street, Winchester, Mass.

The Duross Company and Ames & Co. have leased for Emerence K. Ager the four-story business building at No. 785 Washington street, New York City, to Fiedler & Gurky, carriage manufacturers, for five years.

J. E. Bowers has purchased the Baker & Lee buggy and wagon store at Alexandria, Ind.

S. W. Brown has bought an interest in the general buggy and repair business of W. H. Ashworth at Hawkinsville, Ga., and the firm name will be Ashworth & Brown.

The Birmingham (Ala.) Carriage & Wagon Company is the style of the new corporation which has just puchased the business of the E. H. Summers Carriage Company, and will conduct it in future. The officers are George H. Brummell, president, and C. H. Hostetter, secretary and treasurer.

John F. Ryan has sold his carriage and harness business at Clinton, Ia., to R. W. Leader, who has been in his employ for the past six or seven years.

The firm of C. C. Townsend & Co., at Greensboro, N. C., has been changed to The Townsend Buggy Company, C. C. Townsend retiring. He will be succeeded by S. M. Bumpass, who has for the past six years been connected with the firm.

BUSINESS TROUBLES.

J. W. Haywood, manager of the Haywood Wagon Company, Baldwinsville, N. Y., has filed a petition in bankruptcy, showing liabilities of $12,800.

The J. J. Anderson Wagon Company, of Nashville, Tenn., is the defendant in bankruptcy proceedings which have been filed in the United States District Court. The petition states that the defendant committed an act of bankruptcy on Feb. 3, 1909, in making an assignment for the benefit of creditors to James H. Jamison, trustee.

The Spratlan Buggy & Wagon Co., Atlanta, Ga., on February 5 filed a schedule of its assets and liabilities in the United States court, in which the former was given at $29,251.61, and the latter at $21,578.46.

C. S. Brewer was appointed receiver of the Carthage (N. C.) Buggy Co. on February 27, on the application of a number of creditors.

FIRES.

In a recent fire in Glenwood Springs, Colo., the vehicle stock of J. S. Woody was slightly damaged.

The vehicle and implement stock of V. B. Richardson, in Iola, Kan., has been damaged by fire.

The carriage works of Clem Richardson, in Christiansburg, Ohio, has been destroyed by fire.

The carriage establishment of J. W. Boget & Son, in Francesville, Ind., has been destroyed by fire.

Hood & Wright's veneer plant at Big Rapids, Mich., burned to the ground on the night of February 24. The fire started in the drying room and spread rapidly. The loss is about $20,000, covered by insurance. Fifty men were thrown out of work.

Fire in the plant of the Jackson Automobile Co., on February 12, caused $8,000 damage.

The wagon shop of Ed. W. Friedrick, at Campbell, N. Y., was destroyed by fire February 18. Fully covered by insurance. Will rebuild.

The second story of the buggy and harness department of the firm of Meyer Bros., at Meridian, Miss., on February 21 was completely gutted by fire; damage to stock and building estimated at from $20,000 to $45,000.

The carriage factory of E. Toole & Co., Boston, was destroyed by fire March 2.

J. L. Armstrong's carriage and repair shop, at Charleston, Ill., was destroyed by fire; loss $20,000.

Fire damaged the carriage shop of J. C. Richardson at Addison, O., February 10. Loss $3,000; insurance $1,200.

Fire destroyed the factory of the Conboy Carriage Company, Toronto, Can.

The carriage repair shop of Nicholas Brokampf, in Cincinnati, O., was destroyed by fire March 3.

LARGE TOURING CARS RULED OFF PARIS STREETS.

The large automobile, that is, the big touring car built to accommodate large parties and for long tours, is being ruled out of the streets of Paris as detrimental to health and life, to say nothing of the damage to thoroughfares, and these heavy machines are being stored for summer or touring purposes and lighter carriages are being used in their place for the daily rounds of business and pleasure conducted within the city limits.

A good man cannot think evil.

Digitized by Google

WHY WHEELS BREAK.

There is a Spanish proverb which says in effect that a horse is no stronger than its legs. The author well might have added that a vehicle is no stronger than its wheels. Breakage of wheels is the source of most claims for repairs in the vehicle trade. This fact has led some builders, partly for the purpose of attracting the interest of dealers who well know that a majority of claims involve wheels and partly for the purpose of having a distinct understanding as to the builder's liability on the wheels.

In many cases wheels break because they are too light for the grade. Indeed the best grades of light wheels often are wrecked in the ruts of frozen roads, says Farm Implement News. Buyers have demanded and dealers and manufacturers have encouraged the demand for medium or lower grade buggies with the lightest wheels. Happily this demand is diminishing. In European countries which have improved roads, they say our buggies are too light. This remark applies to jobs equipped with fairly stout wheels, the kind our builders will use when they are not asked to send light ones. If the European opinion is worth anything how absurd it is for us to use the lightest of wheels on our unimproved highways.

But it isn't only the light wheels that break. Light or heavy, a wheel will not stand up if the tire becomes loose and it is used in that condition. No wheel is so good that the tire will not become loose under certain climatic conditions. Manufacturers are exceedingly careful about tires. Jobs leave the factory in perfect condition as a rule, and the dealer should see that the tires are kept tight and the proper dish maintained while the jobs are in his possession. And it is worth while to caution his customers on this point even to the extent of presenting them with a card of rules for the care of vehicles, with the tire part emphasized.

THE OLD BROKEN AUTO.

How dear to my heart is my broken-down auto
As fond recollection presents it to view;
The auto which cost me five thousand good dollars,
And filled me with happiness when it was new;
With nothing to hinder and friends in the tonneau
I raced her along in most beautiful style;
I seldom took more than about sixty seconds,
When the cops were not looking, to cover a mile:
My badly wrecked auto, my busted-up auto,
My old broken auto upon the scrap pile.

That red-painted auto I hailed as a treasure
When first I serenely took hold of the wheel;
The telegraph poles seemed to stand close together
As I went like a streak in my automobile;
When others attempted to pass me I merely
Turned on the high speed, with a sneer and a smile,
And left them to fall in behind me, consuming
The dust and the vapor, which may have been vile;
Alas, my dear auto, my now useless auto,
My old, broken auto upon the scrap pile.

How often I raced over nasty bumps with it
While the ladies behind me bounced up in the air;
I busted an axle the first week I had it,
And escaped death ten times by the width of a hair;
But now it is merely a fond reminiscence,
My hands on the gear I no longer defile;
I will never again cause the farmers to curse me,
Or attempt to take curves in a foolhardy style;
My long, rakish auto, my busted-up auto,
My old, broken auto upon the scrap pile.

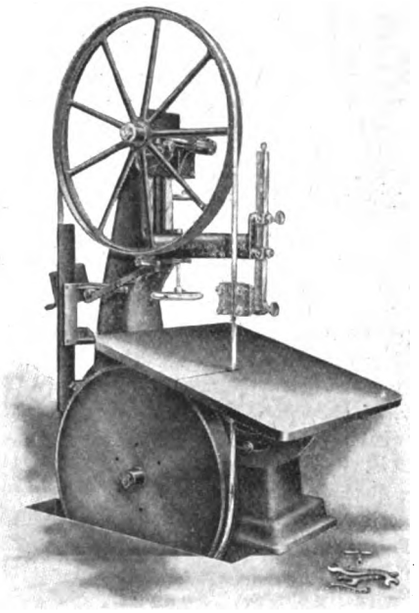
—Chicago Record-Herald.

IMPROVED BAND SAW MACHINE.

The Hamilton improved 48-inch band saw machine No. 84 is one of the largest and the best arranged band saws on the market. It is largely used for heavy band sawing in car, wagon and agricultural implement shops, and navy yards, where a rigid and accurate tool is required. Its construction embodies all the latest mechanical devices for the proper adjustment of the various parts and for retaining the saw at proper tension.

The frame is cast in one piece in column form with large and firm base. The entire machine is self-contained.

The wheels, 48 inches in diameter, 2½ inch face, are of iron, the lower wheel being a solid momentum wheel, weighing about 500 pounds, while the upper wheel is of open pattern. They can be made to take blades up to 4 inches wide on special orders. The wheels are covered with the best endless rubber bands firmly cemented and acurately ground. The upper wheel can be



Hamilton 48-Inch Band Saw No. 84.

raised 14 inches by means of hand wheel and screw. The end of this screw rests on a very sensitive weighted beam lever, which adjusts itself to any variation in the length of blade, thus always retaining the proper tension.

The upper housing is mounted on a cross head and can be tipped in order to throw the blade in any position on the wheel. The tipping is accomplished by means of hand wheel and screw at the back end of the upper housing. The iron table measures 4 feet square and is mounted on a heavy swivel cast iron frame and can be quickly set for either straight or angle work.

Two improved band saw guides are furnished—one above and the other below the table. These are provided with back thrust wheels and side thrust plates. The upper one is mounted on a heavy square guide stem counterbalanced, and will raise to take material 20 inches in height between the table and the guide.

Brazing tongs and vise are provided and guards, brushes, etc. One band saw blade ¾ in. wide is furnished with machine ready for use, or wider blade on special order. Weight, 3,500 pounds. Address the manufacturers, the Bentel & Margedant Co., Hamilton, Ohio, U. S. A., and see their advertisement in this issue.

Every man worth while is supposed to use judgment in carrying out his orders, and at times to vary his orders as his judgment dictates. Some people, though, seem by their actions to define using judgment as going contrary to orders, seeming to think that an exhibition of disregard to orders, and general contrariness, the only way to display judgment. People of this class would be better off following instructions explicitly.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

Fine Construction Requirements.

The farther we penetrate the secrets of exact automobile construction, or rather the science of it, the clearer we see that the goal of perfection lies at the end of accurate mechanical details. Possibly when we arrive at the fundamental facts too much importance is given to the quality of material. Automobile engineers are beginning to recognize the fact that theoretical excellence of material, important as it is as one factor, is not everything; in fact, is not the thing upon which to concentrate constructive attention.

There are many fine points to keep clearly in mind, and one which is unintentionally overlooked because of the mechanical difficulty surrounding it is, such workmanship in interacting parts where oil is used as will automatically maintain a film of oil of microscopic uniformity. The point is uniformity. Where the film is thinner at some points than others, by reason of the microscopic inequalities of surfaces in contact, or where portions of these surfaces are not separated by the film, there is at once set up irritating conditions and frictional obstacles which aggravate the inequalities and lay the foundation for actual friction, the generation of heat and an infinitesimal loss of power which soon becomes appreciable and, in prolonged use, destructive. This may be cast aside by the practical builder as too small a matter for consideration, but it is not. It simply means that lubrication is defective, and defective lubrication, even if slight, becomes a serious matter in automobile construction and operation.

This ever present possibility emphasizes the importance of using metals when undue friction is to be guarded against of sufficient hardness and, what is most vital, dissimilar metals as they microscopically fit into each other better, and thus lessen the possibilities of friction. The microscopic accuracy of bearings is of the utmost importance. Journals must be circles at all points. The axis of shafts should be microscopically parallel as well as eccentric.

While these facts are all recognized as theoretically correct, the art of construction, especially of interworking parts, has not yet reached that fine and delicate stage of exactness which permits of lubrication in a uniform manner. Proper lubrication depends upon microscopically accurate construction. The manufacturers of ball-bearings have magnificently solved the problem. The builders of reciprocating parts and of journals and all bearings have some important and extremely difficult work to do along this line.

Automobile Tariff Agitation.

The automobile interests of the United States are manifesting a deep concern over the proposed tariff revision as it may effect them. The importers of automobiles are of course primarily interested in making the duties as low as possible in order that they may increase their business. American enterprise and skill is making it more difficult for importers to hold their trade.

The importers have no stronger arguments than that there is a general desire for the scaling down of duties. The home interests in their presentation of facts call attention to the difference of wages here and abroad, and show that American cost of labor is two and one-half times greater than European labor. Besides cost of material of all kinds is higher.

They also point to the fact that the business of building automobiles is far from as profitable as is often supposed, and in support of their contention show that in 1902 there were fifty-one firms in the business; that the number was increased in the four succeeding years by two hundred and seventy, during which time one hundred and fifty-five went out of business, leaving in 1906 only one hundred and sixty-six remaining. They also show that at the latest tabulation there were two hundred and fifty-three automobile concerns in existence, of which about one hundred are now turning out automobiles in fair quantity. They finally assert that not ten per cent. of these builders are making money.

On this presentation of these facts and figures the automobile manufacturers feel they are entitled to all the protection they are now receiving. They show that fortunes have been spent in perfecting the machine, and in bringing the industry up to its present state of completion. Any favors shown importers, they argue, would react on those who have done so much for the development of this industry, and would not confer any corresponding benefits.

Automobile Tariff Agitation.

At last there is a general tendency to simplification of the automobile. For years the drift has been in the direction of complexity. The automobile is a thing of thought, one thought at a time. There is a revolution in ignition methods, in the carrying of sight feeds, in lubricators, pumps, oil, gas and water manometrics where they have been in full view of the driver. The dashboard is under a stripping process. There is a simplification of piping. The shaft drive is gaining and the torque rod is losing its prestige. The casing of the propeller shaft is strengthened and there are many other minor modifications, all in the direction of greater simplification.

Wm. Lauer and Calvin Solliday have been appointed receivers of the Lambertville (N. J.) Spoke Manufacturing Co. The company is said to be only temporarily embarrassed. The receivers are to continue the business, and will not shut down a single day. The liabilities of the corporation are $46,438.34; assets, $81.502.76. The company has been hampered by lack of funds.

Silence is the invisible armour that defies harm from foes.

Digitized by Google

WILL OPEN SCHOOL TO TEACH REPAIRING.

In order that it may be possible at any time to furnish any of its dealers throughout the country with trained and competent help, the instruction of automobile repair men will be started by the H. H. Franklin Manufacturing Company, at its factory in Syracuse, N. Y.

The work is being inaugurated under the direction of I. O. Hoffman, formerly an instructor in the College of Applied Science at Syracuse University, and the school will be housed in a building now approaching completion. The recitation hours are to be at night, and the course can be completed in from twenty-eight to thirty-five weeks. Mr. Hoffman already has the first of his pupils at work in the engine assembly room and other parts of the factory. They are employes of the factory and continue as such during the period of special instruction.

Admission to the classes is obtained through special familiarity with machine shop work or with the gasoline motor. The first to complete the course will finish by July 1. New applicants will be admitted about once a month. Franklin engines, showing the change in design in the successive years on from 1903, practically the first year in which the company was a factor in the industry, are being installed in the school for study purposes.

Parts of cars, used in the construction of the various models during the same period, are also available, it being the intention not only to insure familiarity with the construction of this year's design, but with those of the past, most of which are still in service, including eight of the original thirteen, the entire output for 1902, the first season.

The development of the carburetor, the rear axle and other parts will be demonstrated by the display of the parts themselves for the several years. On the first floor of the school building will be a room showing several completed motor cars of 1909 model. On the second floor will be a class room and a general work room. Mr. Hoffman's headquarters will be connected with the class room.

A CAR OF ARTISTIC DECORATION.

The enclosed car shown this year by the Pierce-Arrow Co. at the Garden show is a far more pretentious product than the one shown a year ago. It is a six cylinder, 60 horse power suburban car, the interior of which is in historically correct Louis XVI. period style.

The outside color scheme of the car is green and gold, forming a fitting encasement for the delicate interior. Satinwood, toned to a soft, golden yellow, has been used for all the exterior woodwork, including the dash boxes, steering wheel, and the roof of the chauffeur's deck. The roof of this deck is one of the most perfect specimens of this rare wood that has ever been found.

The handles of the doors, the outside side lamps, the escutcheon covering the locks and even the tiny head of the door keys are authentically Louis XVI. in design and treatment. All of the metal mounts are in brass, exquisitely chased and heavily gold plated and finished in the traditional ormolu style.

From the dove gray of the carpet upward is a gradual crescendo of color and ornament that reaches its climax in the magnificence of the ceiling, with its encircling ornament of ormolu and running design of slender acanthus entwined with garlands of flowers, all painted in the most beautiful colors on a ground of soft ivory enamel. The central portion of the ceiling is enriched with an ormolu dome lamp of the acanthus motif.

A frieze of separate panels, each one falling just above a window, forms a pleasing accessory to the ceiling. The center panel of each bears a painted decoration complete in itself, yet united to its companions by the balance of mass and tone, although the the motif is changed in every instance in this manner bearing out both example and tradition of the Louis Seize period. This frieze is borne aloft by a row of slender pilasters that also serve as a separation and guide for the window frames.

The upholstery is a silk stripe of light and yellow, enhanced with long garlands of roses through the center of the stripe. It extends to the ceiling, just back of the rear seat, and forms the decoration for all the lower portion of the car below the line of windows. The under portion of the front panel bears a toilet box, gracefully fashioned and containing a set of dainty toilet articles, the design for which is in keeping with those that might well have graced the boudoir of Marie Antoinette. These also are decorated in pure Louise Seize style and add the final touch to the elaborateness of the detail which goes to make this car a logical and fitting example of the possibilities that will be developed in even the early days of this new epoch on which the automobile industry is just entering.

IMPORTANT IF TRUE.

Thomas A. Edison, in New York January 6, announced the perfection of a storage battery sufficiently powerful to operate a street car for 100 miles without recharging and with a life of from five to twenty years. In other words, he insists that he has discovered "the secret of perpetual youth" so far as storage batteries are concerned. Both street railway and automobile men see in his announcement a revolution in the application of power to rapid transit conveyances, should the battery be what is claimed for it.

"Every automobile man is interested in this announcement," says a prominent automobile manufacturer. "There are many factors to be considered, and to date we have all been disappointed in the failure of Mr. Edison's plans to work into commercial realities as soon as we had hoped. Many had watched his work with great interest, especially when word was given out that he had obtained great results from the use of cobalt in his battery. Others had given up hope of his perfecting the much-desired battery, and were rather looking for some one else to stumble on the discovery of the right principle.

"A great deal will depend on how light such a battery can be made. The present types weigh from 800 to 1,000 pounds. A reduction to half that weight would mean, of course, that the whole frame of the auto could be made lighter, and that with the same power the auto could be driven correspondingly farther. The life of the present batteries, with good use, will average from one and a half to two years. A battery with a life of five years would add greatly to the value of the machine.

"Every one has realized that electricity is the ideal motive power for automobiles, but the battery problem has been the one which has made the use of gasoline and steam necessary for certain types. Let the proper battery be produced, and there will be no other motive power in extensive use in automobiles."

Mr. Edison has permission from Receiver Whitridge, of the Third avenue road, in New York, to run an experimental car over the line early in the spring.

ART DECORATIONS FOR AUTOMOBILES.

Artistic effects are always pleasing to the eye, and when not carried to extremes assist materially in effecting sales.

Exceedingly costly work in automobile decorations is made possible by the adoption of transfer ornaments, which line is original with Palm, Fechteler & Co., of 675 Fifth avenue, New York.

This pioneer house is alive to the wants of the automobile trade, and have an exquisite line of ceiling and other decorations for limousine bodies and town cars, also a large variety of plaid designs and cane work for body panels.

Nothing adds more to the finish of a car than these pleasing plaid and cane work panels. Many car builders are investigating this process of car finishing, and the live ones are adopting this method of decoration. Better write for further particulars now.

Digitized by Google

Tires and Accessories

THE QUESTION OF TIRES.

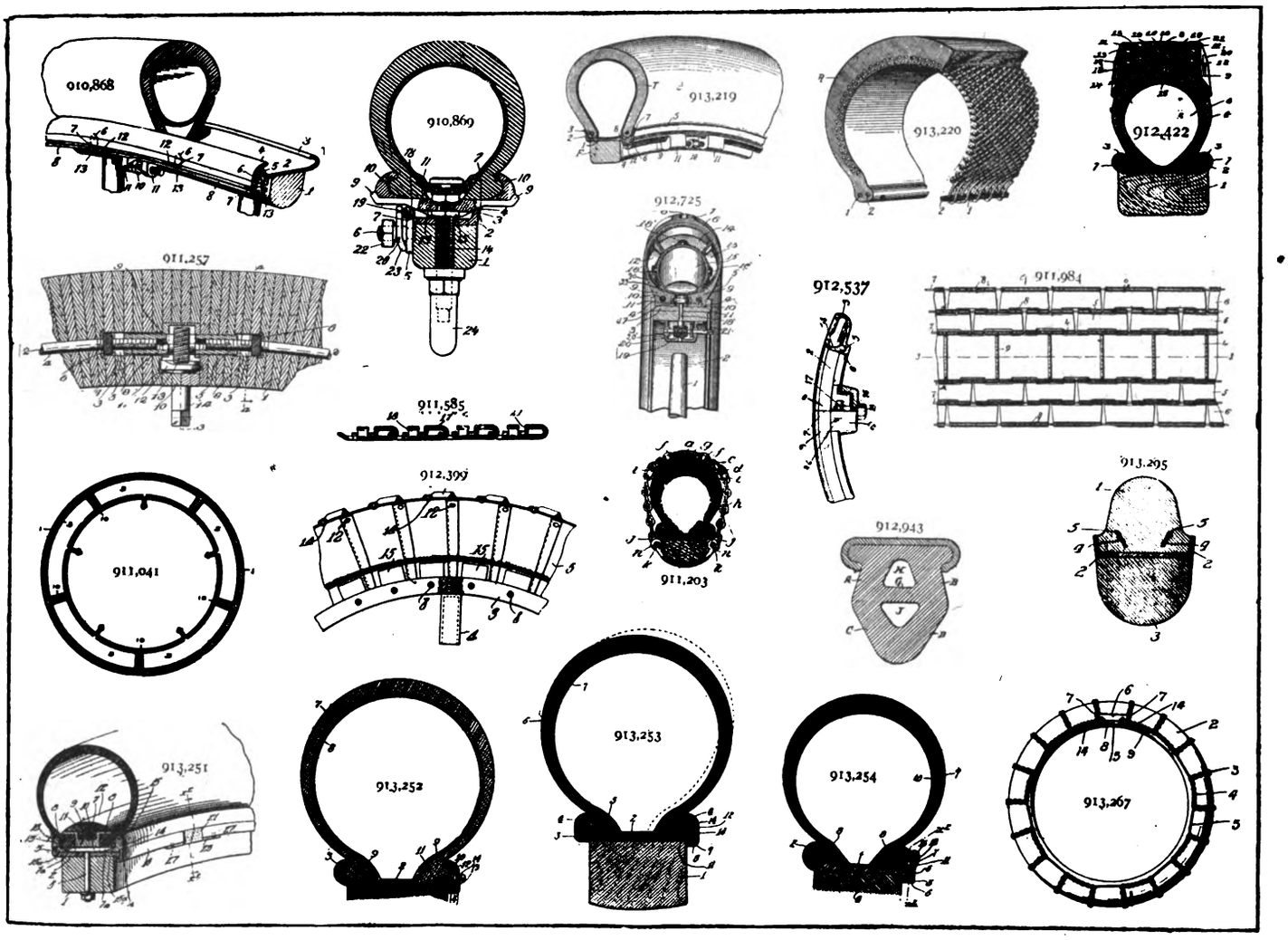
"Necessity is the mother of invention." Recently granted patents are indicative of effort to overcome what is recognized as one of the most difficult problems confronting the vehicle builder, namely, tires. The expense of maintenance of tires is well known to be an important question to the vehicle user, and the manufacturer who can put his vehicles on the market with a tire that will fulfill the functions demanded of it, and at the same time be subpect to little or no expense for upkeep, will find the vehicle-using world at his feet with wealth untold.

To supply this demand the inventors of the country have flooded the patent office at Washington with ideas and contrivances, each designed to be a panacea for tire troubles. Of course, a good many of them are probably more idealistic than practical, but the American inventor has solved many problems seemingly as difficult as the tire problem, and it is only a question of time when he will solve that as well.

The number of recent attempts to cure various tire troubles, and the importance of the question to vehicle manufacturers so great, has caused The Hub this month to present some of the more recent patents, aside from the regular monthly article on patents that appears in The Hub. Drawings of these patents will prove of much interest to our subscribers.

The attention of some of the inventors has been devoted to non-skidding appliances, while others have worked more on devices that will allow the tire to be easily and quickly detached. Much interest has been taken in the question of durability, aiming at a tire that while performing its functions of resiliency would be immune from injury and the consequent repair cost.

Of these Nos. 913,267, 912,399 and 911,585 are designed primarily for the prevention of skidding troubles. The general idea can be easily recognized without a description. The device for easily and quickly detaching the tire from the rim has received attention in Nos. 910,868, 910,869, 913,219, 911,257, 912,-



725, 912,537, 913.251, 913,252, 913,253 and 913,254. Some of these provide for an adjustable rim, while others find their adjustment in a mechanism within the tire itself. No. 913,295 describes a means of attaching a solid tire to the rim. The question of durability has at least been partially solved, the inventors hope, by Nos. 911,041, 911,203, 912,943, 911,984, 911,422 and 913,220.

To Make Extensive Improvements.

The Goodrich company has defined a campaign of improvement which will result ultimately in replacing nearly all the old buildings of the factory at Akron with an almost solid quadrangle of six-story structures of reinforced concrete construc-

Digitized by Google

tion. Two sides of this quadrangle have been completed. A building has just been started which will form a part of a third side in the rear, and plans are under way in the office of the engineer for a building 300 feet long which will form the fourth side, extending from a point near the general offices to the canal in the rear. To erect this last building it will be necessary to tear down several old brick buildings three and four stories in height. The new building will provide, on the same ground space, three times the present floor capacity. The last building to be completed, on the front side of the quadrangle, is now being equipped with machinery for the manufacture of automobile tires.

New Branches.

The Firestone Tire & Rubber Co. has opened a new factory branch at Los Angeles, and has also opened a direct branch at Cleveland, where an entire storeroom has been leased at 1918-1922 Euclid avenue, to handle the products of the Akron factory.

Ready to Start.

The Mansfield (O.) Rubber Co. expects to be in operation about March 15. They have contracted for the disposal of the output of their automobile tires to a car manufacturer in Michigan. They have about 68,000 square feet of floor space, and have in progress new construction which will add 40,000 square feet. F. A. Wilcox is president and general manager, and F. W. Walters sales manager. Both gentlemen were formerly connected with the Pennsylvania Rubber Co.

To Enter Tire Field.

The Rubber Step Manufacturing Co., of Exeter, N. H., are planning an enlargement of their premises and the taking on of some new lines of manufacture. A new specialty will be an automobile tire to be made with a new cement mixture to fasten the rubber and canvas of the tread more securely than has been the rule hitherto. They were lately working on important orders for rubber steps for England and Australia.

The Victor Rubber Co. Resumes.

The Victor Rubber Co., Springfield, O., whose plant was burned some time ago, have made good progress in getting into operation again. It was only 135 working days from the time of breaking ground until they were ready to start their new engines. The new plant consists of three concrete buildings, so arranged and divided by fire walls as to make another serious disaster by fire practically impossible. It is stated that their tire department has been increased in capacity about 50 per cent.

New Ohio Corporation.

The Cincinnati Rubber Tire Co. has been incorporated under the laws of Ohio, with a capital of $10,000. Frank Ayres, M. C. Lykins, Charles S. Naughton, Joseph B. Schroeder and James S. Bradshaw are the incorporators.

Palo Amarillo.

There is so much interest of late with regard to "Palo amarillo." savs India Rubber World, that the following statement. which comes from one of the best equipped chemical laboratories making a specialty of india rubber, is timely:

"We had some of the latex sent up and the samples we made from the milk of the latex gave us in gum 34 per cent. and resin 6 per cent. The gum gave absolutely no cure and gave no elasticity. We have never been able to find any trace of rubber in the gum, but the gum was a rubber like gum but so sticky that it could not be worked on a mill. It might make a first class fly paper."

Look for a Banner Year.

The Akron rubber manufacturers are figuring on 1909 as being the banner year in sales, some even saying that the number of tires manufactured will fall little short of the million mark, and claiming that the estimate of $15,000,000 as the probable value of the output of automobile tires is far too small. Many carloads of tires are being shipped every month to out-of-town branches, which are being stocked up.

HOW TIRES ARE MADE.

The making of tires is one of the most interesting phases of the automobile industry. The advances made in this particular branch of what has come to be one of the greatest factors in American industrial life in truth are amazing.

Automobile tires are made in three ways, or rather, two distinct ways and a combination of the two. These two ways are "moulded" and "wrapped" tread, and all tires may be divided between these classes with one exception, which combines what are said to be the best points of both.

The "moulded" tire is built up layer by layer on an iron core. Over it is clamped an iron mould. It then goes to the vulcanizers. Here heat expands the rubber, creating enormous pressure inside the mould, which forces a perfect union between the layers of rubber and fabric which go to make up a tire. This pressure is so tremendous that a 2-inch cube of rubber enclosed in a cast-iron mould with walls 2 inches thick will crack the iron when subjected to the heat of the vulcanizer.

The weakness of the process lies in the fact that the building up of the fabric and rubber piece by piece is an operation requiring skill and dexterity. If the strips of fabric overlap ever so little, there's a ridge. If they fail to meet by the fraction of an inch, there's a hollow. These ridges, hollows, irregularities are said in the curing to become hidden weaknesses and defects, because of which one "moulded" tire will last only 1,600 to 2,000 miles, while its mate stands up perfectly for 12,000 to 15,000 miles of hard riding.

The "wrapped tread" tire is built up layer by layer on an iron core in the same manner. But before curing the iron core is replaced by an air bag—an extra strong inner tube. And instead of being clamped in a mould it is wrapped about with many layers of strong tape and is then cured (vulcanized) in live steam.

The compressed air in the air bag smooths out all the irregularities in the layers, as your hand smooths out wrinkles in a garment; there can be no hidden ridges or hollows to induce blowouts and cut down the mileage.

But it does not give the terrific squeeze that the moulded tire gets; thus lacks cohesiveness and unity, loses durability and strength.

Besides these two methods of tire making, there is also the combination of the two employed by the Goodyear people. The tire is first put on the iron core, clamped in the iron mould, the same as the "moulded" tire, and enclosed in hydraulic press vulcanizers, surrounded by live steam until the rubber has expanded to the utmost—until the squeezing has reached its limit.

Then before the rubber has fully set—while it is still plastic—it is removed from the vulcanizer and carefully inspected, the tread applied, the iron core is replaced by the air bag, the iron mould by the winding of heavy tape, it is inflated on a rim, put back into a vulcanizer and left until the curing process is complete.

The iron core and the squeeze weld the tire into an inseparable whole.

The air bag then smooths out any wrinkles, furrows or irregularities which may have been hidden from the inspector's eye.

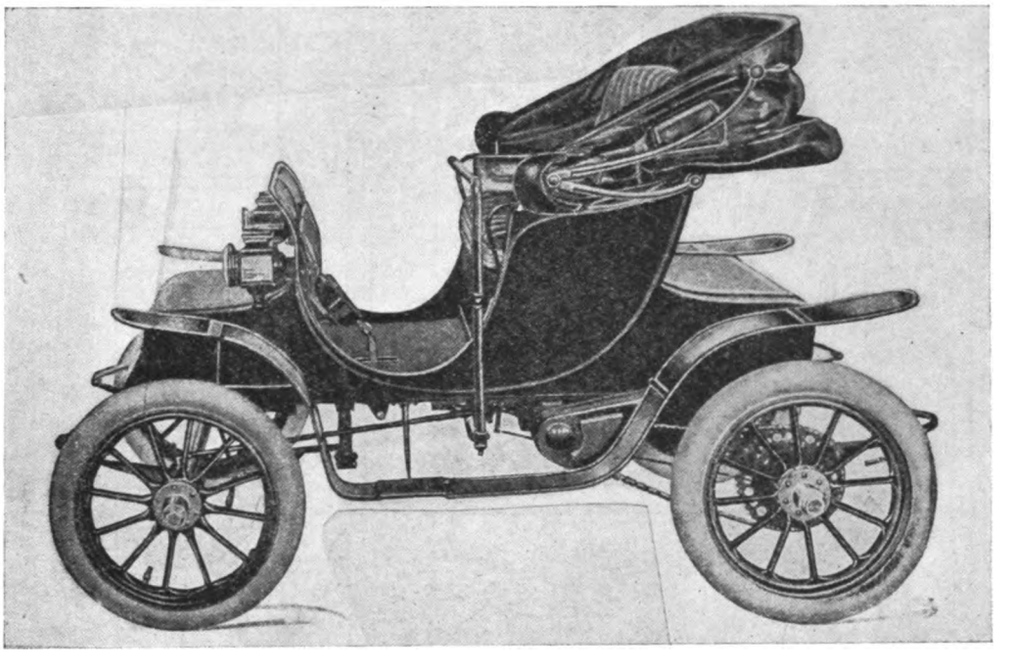
The result is said to be that the tire is as firmly knit together in all its parts as the best "moulded" tire and as free from hidden defects as the best "wrapped tread" tire.

TAXICABS IN FAVOR.

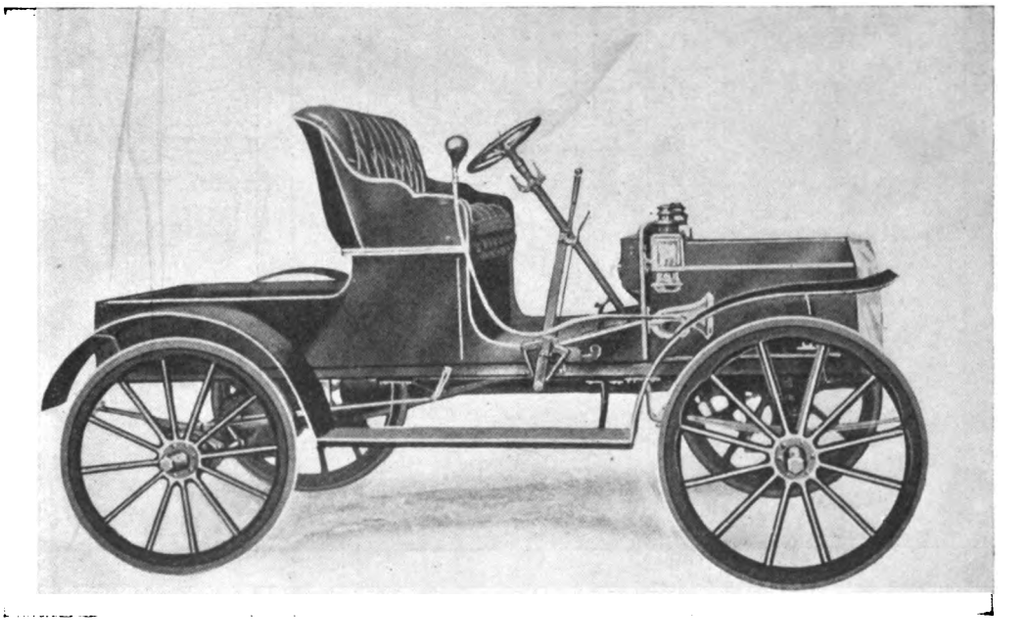
Taxicabs appear to be a successful innovation on the customary methods of city travel. A few southern and western cities, New Orleans being the latest, have adopted them and have found them in every way preferable to the old livery hacks and more or less dilapidated conveyances usually available. Their construction has been improved in both directions of lightness and heaviness, and in amount of space permissible to each passenger. Several builders have within a short time established special constructional facilities.

Digitized by Google

Illustrated Automobile Section, March, 1909

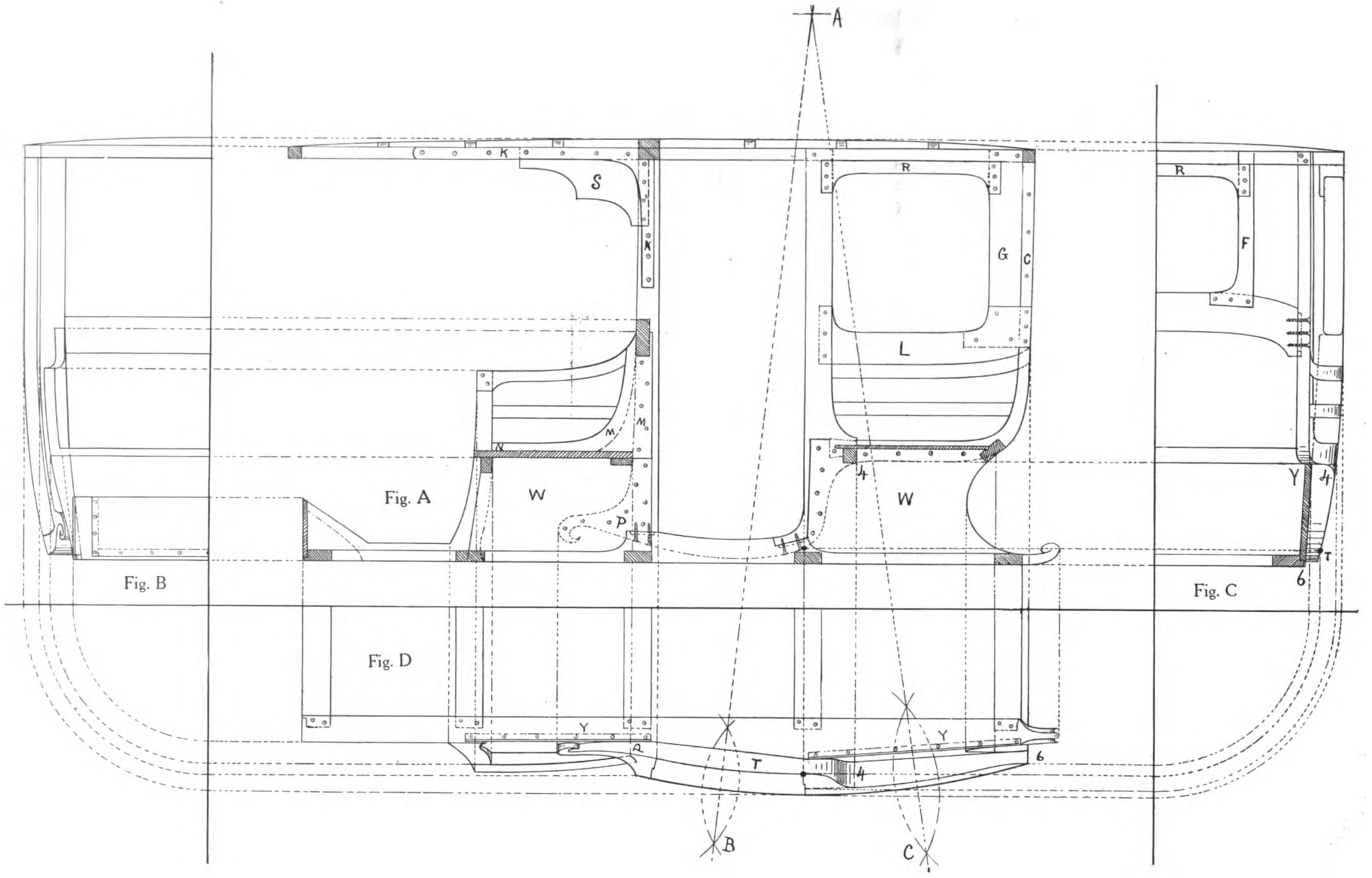


TWO-PASSENGER ELECTRIC STANHOPE.
Manufactured by Columbus Buggy Co., Columbus, Ohio.



COMMERCIAL AND LIGHT DELIVERY CAR.
Manufactured by Jeannin Automobile Co., St. Louis, Mo.

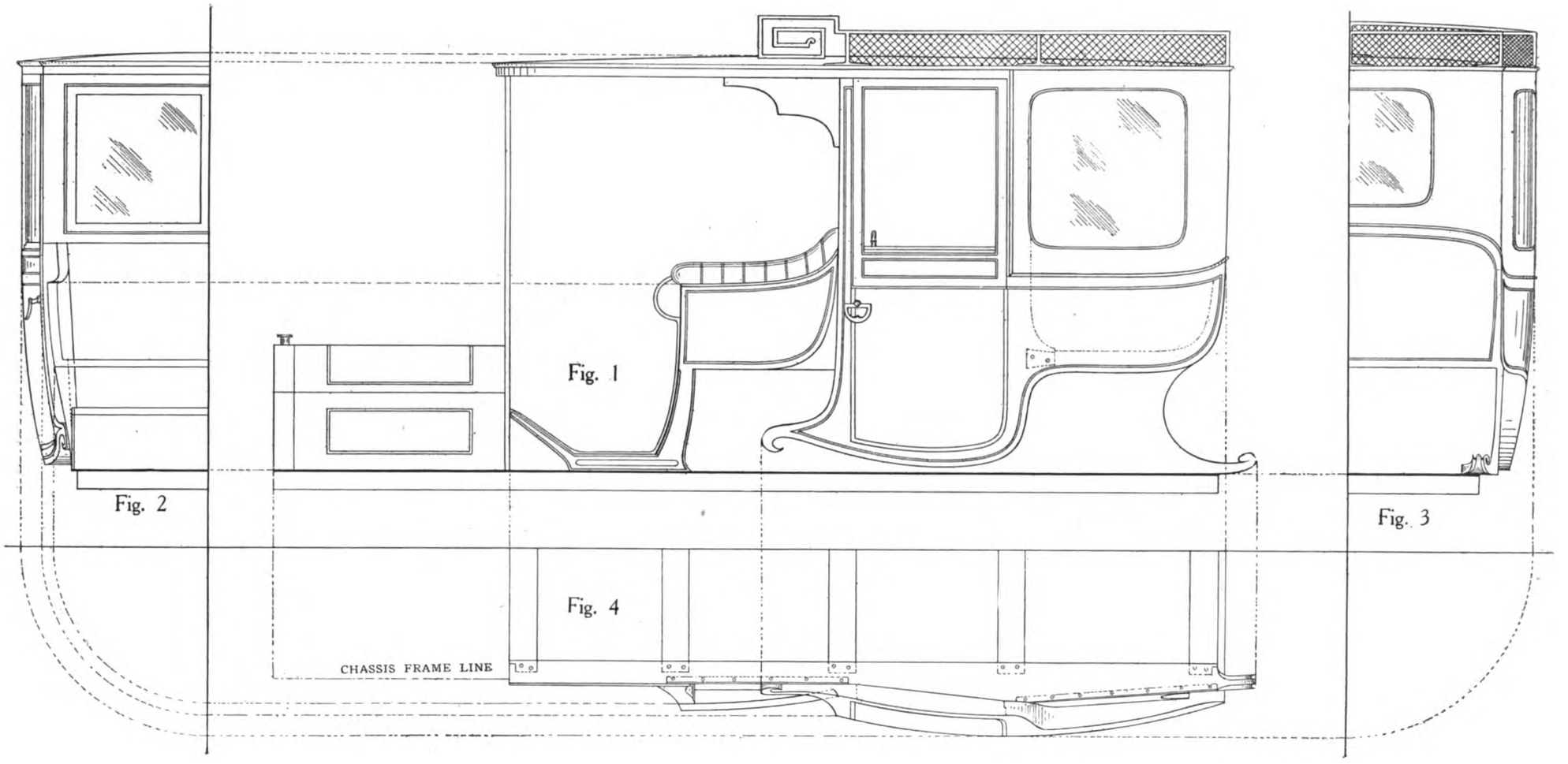
Digitized by Google



CONSTRUCTION DRAWING OF LIMOUSINE MOTOR BODY.

Described on page 459.

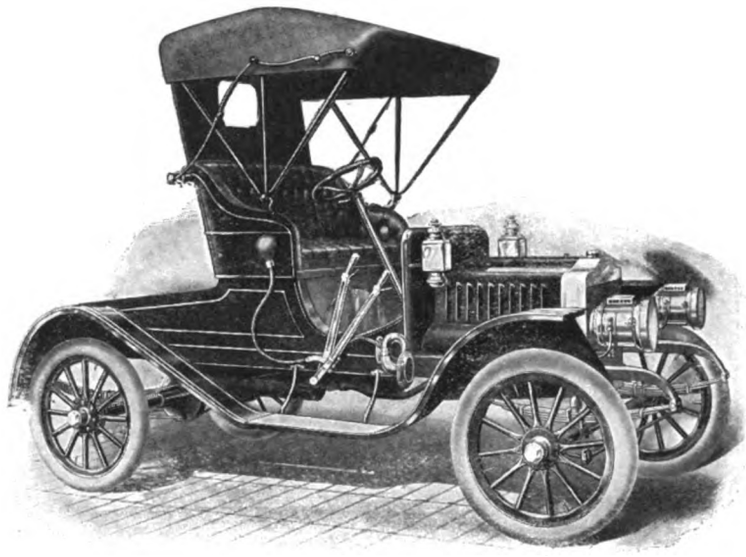
Digitized by Google



WORKING DRAFT OF LIMOUSINE MOTOR BODY.

Described on page 459.

Digitized by Google



TWO-CYLINDER 20 H. P. PHYSICIAN'S CAR.

Manufactured by Maxwell-Briscoe Co., Tarrytown, N. Y.



BREWER'S THREE-TON MOTOR TRUCK.

Manufactured by Reliance Motor Truck Co., Owosso, Mich.

Digitized by Google

Body Construction and Finish

WORKING DRAFT OF LIMOUSINE MOTOR BODY.

Illustrated on pages 456 and 457.

In the October issue of The Hub there appeared an excellent article on "Automobile Architects," by Mr. F. P. Stone.

The gist of the paper showed that there was a widening necessity for specialization in the designing of motor carriages, and that in present day demands there was no room for the draftsman who made impracticable drawings.

The motor carriage trade may console itself with the sweet unction that the field of the world's fruits is for those who can design with an absolute fire and infuse their work with a living force of practicable usefulness.

Exhibitions of motors show a dearth of originality, and it may be the case that the 1909 exhibition of motor cars recently held in Paris will not be repeated annually, and it follows, as Mr. F. P. Stone so ably points out in his paper in The Hub, that the architect, or designer, of the motor carriage will be the coming force in lifting the vehicle to a higher attitude in its art lines.

Therefore it is to the talent of the designer, coupled to the practical man, where striking improvements must be looked for, and not from the stunted tree of mediocrity, which these motor carriage exhibitions too plainly reveal.

During the past year, it has been fully apparent that the large touring car was not by a long way the favorite with the motoring world, and that it had reached its own high water mark as a roadster commercially.

The touring car is the light car, running from 10 to 20 horsepower, and ranging from $750 to $1,750, or less, as the strata of inventors may be able to place upon the market. There will of course still be the demand for large touring cars, but the trend of public favor is undoubtedly in the following of the smaller car.

The small car is not a racer; there is not the weight in it for high speed; but for town use and the uses of general ownership it will supply a coming need either as a landaulette or limousine.

The design given here is of a small limousine motor body, yet possessing ample room without excessive weight being imported into its construction.

The controlling lines of the body, from the elbow to door bottom side, are serpentine in pronounced and flowing curvature, and the chariot pillar fashioned to harmonize.

In the production of growing design it is not to be expected that a new vehicle can be fashioned simply at will, but suggestions, like thoughts, sprung themselves upon the designer, and seizing upon the point of inspiration he engrafts new lines which, as they evolve strength, surround the surface enclosed with a new linear foliage. And as line is added to line, and curve to curve, new formation blossom into a complete figure of design, but which, to have an affinity to the public taste, must be possessed of the poetry of art, in the full outline of the carriage as a vehicle of usefulness and beauty.

The design of limousine shown in the accompanying working drafts is rigidly held to the conformation of a horse-drawn carriage. The top hind quarter is cut up with a full glass light, instead of making it in sections. The elbow line is faintly curved at the corner pillar point, thus conforming to the lines of a brougham or landau, while the door is identical with present style broughams. The door is fitted with patent lever spring locks, which work from the handle at the door fence rail, or with the outside handle, as on an ordinary horse-drawn carriage having these fittings. The front seat quarter is curved in the corner pillar and elbow line to harmonize with the hind body, bottom quarter, while a firmness is given to the boot and quarter alike, through the style and position of the front pillar. The bracket on the top lines is cut from the solid side, and the bracket's formation is planted on in moulding thickness, and level with the bottom of the filling-up piece at bottom.

The quarter is framed and groove panelled, the corner pillar line and moulding being boxed out in the solid, while the pillar itself is half checked to the front of the chariot pillar. The boot side is half check framed to the bottomside from underneath, and fixed to the inside of the pillar, as lined on the plan. The hind boot is framed up in the same way, and screwed to the bottomside and standing pillar; the boot sides are made of ⅞ inch solid stuff, birch being preferable.

The hind top back panel is fitted with a large back light, so that with the quarter light the door and front glass lights there is ample comfort in this particular, while at the same time the chauffeur is protected with the overhead canopy and the wind shield. The canopy is framed with a solid bracket support, and still further strengthened with an inside edge plate, by which a thorough job is made of the body. The canopy being a cantilever, must be protected at its framing to the front pillars. The front of the canopy is of course strengthened directly by the standards, which stiffen the effects of vibration and take the stress in some degree off the corner framing at the pillar.

Fig. 1 shows the design in elevation. Fig. 2 shows the half front view, and the positions of body glass frames. Fig. 3 shows the half back view of body, and the design of back light and the back moulding lines. Fig. 4 shows the half plan in finished outline.

Body Construction.

In offering a design with constructional parts out of the general run, it is necessary that this should be fully set out to give a thorough exposition of the drawing. To attempt to do these things upon a finished design is, to use an aphorism, trying to put a quart of liquor into a pint pot, because where a true working construction is sought to be explained, that explanation must be shorn of other immediate intricacies which the lines of design and construction when shown together create.

In Fig. A the inside elevation of the body's framing is explained in surface; a body maker can see at a glance how the timbers are framed together in completion, and are further explained thus: W W are the boot sides in front and at back of body; R G L are the framing pieces of the top quarter light; S is the bracket support to the canopy and front pillar; M M shows the front driving seat corner pillar, which is got out in the solid, and half checked into the front chariot pillar and mortice framed into the quarter pillar at N.

The corner pillar curve is boxed on in the solid, and the moulding as well on the outside as in the design drawing, Fig. 1. The canopy and top of the front pillar are strengthened with a flat corner plate, K K; the plate is forged with a broad corner and curved on the inside, as explained on the bracket S. The framing of the back of the body is shown in Fig. C. The pieces R F are half checked together and to the back cross rail, which is stump tenon framed into the corner pillar and secured with screws. The elbows are half checked to the standing pillars and to the corner pillar, while the elbow on the driving seat quarter is half checked to the corner pillar piece, and to the front pillar. The front pillar is framed to the seat individually, and the outside filling up piece which forms the line of the pillar, as in Fig. 1, is planted on, and secured to the boot side with

Digitized by Google

screws from the inside. The bracket moulding piece is jointed and planted on to the boot side; the standing and shutting pillars are stump tenoned into the bottomside, and screwed up to the shoulders with long screws up through the tenons as shown. Fig. C shows the turnunder of the standing pillar, and all the cross measurements of the body. Fig. B shows the half front view and the widths of the front seat, also the line of the glass frame on inside of chariot pillar.

The Half Plan.

Fig. D shows the half constructional plan of the body. In building this body there are features that call for special exposition. The base line of the body is similar to that of a brougham in its connecting points of the front pillars and standing pillars and back width. These points being settled, the diversions are bisected as at B and C, and where the lines intersect at A gives the center point for the radius of the body's side sweep. Then the turnunder of the bottomside, 4 4 Fig. A, and 4, Fig. C; then the width of the back, 6 6, mark off the thickness of the corner pillar, and the thickness of the bottomside on 4 4, and draw the width as shown. Then the turnunder line T T, and mark off the thickness of the bottom of the pillar at P. Now the inside face of the chariot pillar must run in line with the boot side Y, which is screwed to the pillar; also on the standing pillar at Y, Fig. C.

The chariot pillar must stand square to the boot side in front, and the shutting side bevelled to the door line, from the faced side, and bevelled on the outside to the line of the body sweep, in line with the front edge of the pillar, and return hollowed from point P on the turnunder line T to the size as shown in the plan. Getting the chariot at its base out in this way is of course unusual construction, but the construction of this body demands it. We cannot be hedged in by the tradition of usage, but by the exigencies of design; hence a full man follows no school, and has no horizon to his creative inventiveness, and thus it is that in every break from the rut of custom on to the untrodden ground of advancement the wheels of progress are retarded in their revolution. They are, however, levered forward by nerve with that restless energy always thirsting for further achievements.

The width of the body to the chassis is set off from the bottom of the chariot pillar at P, and the hind body and central prejections follow from a square line from the outer edge of the front bottomside.

The bottomside is got out a full width of 8 in. and to a depth to the doorway line, and stumped off by the points where the standing and shutting pillars are framed. A very light edge plate is necessary along the bottomside and up the pillars 2 in. by ¼ in. Mild steel is ample for the work, because the boot sides which are fixed to the pillar framing are directly in resistance to the strains acting on the body, and from their depth offer great strength to the body's framing.

The sizes are: Length of body on chassis line, 8 ft. 6 in.; length of body on elbow line, 4 ft. 8 in.; depth of front boot side, 15 in.; depth of front quarter over all at front pillar, 12 in.; at back, 18 in.; length of quarter on seat line, 22½ in.; width from seat to dash screen, 24 in.; length of bracket bottomside piece, 17½ in.; length of bracket, 11½ in.; width of door, 22 in.; length of hind quarter on elbow, 31½ in.; width of hind top quarter, 32 in.; width of side light, 22 in. by 23 in.; depth of hind boot side, 15 in.; depth of quarter from bottomside to bottom of waistline, 12 in.; depth of elbow from bead, 2 in.; length of canopy bracket, 16½ in.; depth of canopy bracket, 10 in.; length of canopy from front pillar, 4 ft. 1½ in.; depth of roof luggage guard rail, 5 in.; width of body behind on elbow line, 44 in.; over standing pillar, 54 in.; over front pillars, 48 in.; width on seat inside, 45 in.; width of chauffeur's seat over pillar, 44 in.; on top, 47 in.; width across elbow points of quarters at front pillar, 42 in.; on seat at this point, 40 in.; width of back light, 24 in. by 16½ in.; width of body on chassis on front bottomside, 39 in.

CLAIMS PATENT ON SHAFT-DRIVEN AUTO.

Homer L. Boyle, manager of the Lansing Auto Co., of Lansing, Mich., has begun injunction proceedings through his attorneys, Brown & Hopkins, of Chicago, against the Franklin Automobile Co., in the United States circuit court of northern Illinois, to enjoin that company from making any further use of certain automobile parts which, it is claimed, are protected by patents granted to Boyle at Grand Rapids in 1892.

Boyle claims that he was the first inventor of a shaft-driven road vehicle, and maintains that it is impossible for other manufacturers to build vehicles of that sort without infringing on his right. He asserts that legal steps will be taken against 250 automobile companies throughout the United States, and that he should be successful in collecting a royalty of $5 each on all shaft-driven cars manufactured.

NEW MODEL LOZIER IN SMALL CAR FIELD.

Catering to the man of moderate means, the Lozier Company has brought out a type of small car, which was exhibited at the Garden show for the first time.

The new car, as the name implies, is of the six cylinder type. The cylinder dimensions are 3¾ inch bore and 4½ inch stroke, giving a motor rating, according to the A. L. M. A. formula, of 33 horse power. It has the same speed as the larger cars, the principal difference being that it is smaller, lighter and designed to carry a smaller number of passengers. A feature of the car is the suspension of the motor and gear from a sub-base, which permits the removal of the engine from the chassis with the least difficulty.

CARS REGISTERED IN FOUR YEARS.

States and Cities.	1905.	1906.	1907.	1908.
Maine	737	549	853	994
New Hampshire	702	557	517	565
Vermont	—	868	449	667
Massachusetts	9,587	2,725	6,515	17,500
Rhode Island	—	2,078	840	1,047
Connecticut	—	—	2,093	2,810
New York	8,625	11,753	13,985	15,480
New Jersey	—	13,759	17,619	21,948
Pennsylvania	—	13,899	15,422	25,179
Delaware	—	—	—	881
Maryland	655	810	1,496	1,691
Virginia	—	628	717	648
Florida	133	174	184	243
Tennessee	369	312	366	462
Ohio	—	—	—	11,030
Pueblo, Col.	49	—	—	—
Indiana	—	—	1,612	4,109
Michigan	—	—	—	7,500
Illinois	—	—	—	6,376
Wisconsin	1,493	1,174	1,481	2,045
Minneapolis, Minn.	—	534	472	773
St. Paul, Minn.	—	380	117	305
Iowa	799	1,022	1,947	3,166
Missouri	—	—	2,000	874
Nebraska	572	510	1,052	2,141
North Dakota	—	—	—	214
South Dakota	358	251	314	724
Colorado Springs, Col.	105	—	—	—
Denver, Col.	847	—	—	—
Utah	—	—	212	300
California	4,728	4,037	5,241	5,558
Oregon	219	142	278	559
Totals	29,868	56,158	75,783	129,361

Courtesy requires consideration for others and self-restraint.

Digitized by Google

POINTS IN CONSTRUCTION.

More bracing and less dependence on joints is the suggestion made in some quarters for the securing of desired strength in connection with light weight. It is found in automobiles of the lighter class that joints are with difficulty made sufficiently strong to withstand all the shocks to which they are subjected. Joints, no matter how well made, have their limitations as to strain, and, when the limit is reached, give way. Diagonal bracing is old-fashioned and reliable, and can no doubt be applied to automobile construction when joints cannot be made of sufficient strength to resist strains.

Some few automobile builders who have been purchasing their automobile bodies have resolved to manufacture their own work, and to that end have installed body shops in their plants, where they can meet the finer requirements of construction. While this is being done in a few instances, there is no well defined idea or conception of what an automobile body should be. Only general principles can be laid down, and these principles have been elaborated in carriage construction. The modifications are not radical, but grow out of previous conceptions and rules of construction.

In Europe creosoted wood blocks have been extensively tried for automobile roadway, particularly for heavy traffic. For light traffic, pitch and broken stone properly prepared and mixed are found durable. But while these mixtures are found to answer requirements the results are only tentative. The cost is more or less prohibitive where extensive mileage is desired. For local purposes creosoted blocks are found to be suitable and give good and lasting service.

Autogenous welding is recognized as the highest and best method of uniting metals. The burning of acetylene with pure carbon in a hand torch which produces a flame 1-16 to 1-4 inch in diameter, accomplishes a union which was never before possible, at least not so thoroughly and economically. The repairs in situ is a vast advantage, by which the partial dismantling of the machine is rendered unnecessary. The intense heat of 6,300 degrees F. is almost miraculous, and yet is based upon simple chemical conditions. Cast iron and aluminum yield to the flame. This method of welding is yet in its infancy, and it will be developed to a much wider number of uses and utilities than exists at present.

LARGE CARS STILL IN FAVOR WITH THE WELL-TO-DO.

Several articles have appeared during the last few weeks to the effect that there is a tendency toward lighter cars, and some have gone so far as to say that the large high powered car is a thing of the past. Most of these discussions have been by well known factors in the automobile industry. It seems to me, says H. R. Mallow, of the De Luxe, that those who make these statements have failed to consider that the light, low priced cars are comparatively new, which would naturally make them more conspicuous as a novelty.

The demand for small cars is not a result of any shrinkage in the call for the comfortable large car, but is due to developing conditions generally. The traffic requirements are changing and the automobile is becoming an indispensable asset to business. People in moderate circumstances are purchasing cars, and experience has taught those who can afford the comforts of life that it is not practical to use their large high powered cars for shopping and calling.

It is just as unsatisfactory to use one car for all purposes as it would be for electric line companies to use one size car for both city and interurban service. You would not think of being jolted around in a small city street car on a cross country trip, nor would it be practical to use the large sixty-foot cars in the congested streets. The same principle applies to automobiles.

A touring car of 40 or 50 horsepower, constructed properly and of the right material, should, if given care, run from 75,000 to 100,000 miles with nominal repairs. This mileage will, under ordinary use, extend over a period of from three to five years, and thus from $4,000 to $6,000 is not such an unreasonable price to pay for a car of this type. There are several cars selling at this figure that are well worth the money. If built cheap, however, a car will not give the service and satisfaction it should.

Personally I am glad that the manufacturers have been able to produce a low priced car that will serve certain purposes and afford conveniences and pleasure to so many people. Conditions demand cars of this type, and all leading manufacturers of automobiles must build them sooner or later. At the same time it is inaccurate to say that the advent of small cars means the disappearance of the larger models with all their comfort and luxury.

PATROL SYSTEM TO PROTECT CAR OWNERS.

New Method Devised to Prevent Use of Automobiles by Other Persons Than Their Owners.

Many and varied are the ways devised of checking the festive "joy rider." Even later than the proposed legislation in which the unauthorized use of a car is made a violation of the Penal Code is the organization of a New York City company designed to dissuade the driver from organizing himself into an entertainment committee at his employer's expense. The concern purposes protecting owners against the unlawful use of their cars, saving the expenses of extra gasoline and lubricants, as well as wear and tear on car and tires.

The method of the new concern will be to employ a number of detectives, mounted either on bicycles or motorcycles, to patrol the roads in New York and vicinity both day and night. The cars they are supposed to look after will be marked by a metal tag of distinctive design, affixed to the rear of the tonneau. Upon encountering a car bearing this device the time, place and details regarding the occupants will be noted.

On the following day the owner will receive a card informing him of the observations. There will be no attempt to stop any car, to caution drivers, or in any way interfere with the use of the car. The men will not be uniformed, nor will they have any police powers. Their work will be simply to do patrol work, and it is believed that, apart from their reports, the fact that an authorized trip may be made the subject of a report will lessen the number of rides taken without permission.

HAVE HAD THEIR IDEAS ALTERED.

A conversation with a leading West End coach builder strengthened us in our opinion that the demand for horsed vehicles is reviving. This gradually increasing demand was first remarked by us to occur in Scotland, and we have noticed it repeatedly since in all parts of the country.

The trade, however, is not commencing again exactly where it left off, as far as fashions go. During the years in which the carriage was banished to the background ideas have been changing, and while the country demand has not called for any radically new designs, London customers have been asking their coach builders for novelties in outline and in treatment.

"It is no good," said the above mentioned coach builder, "trying to sell people the old stuff. They won't have it and I wish I had recognized it before. I have over a dozen carriages I bought at recent sales and I am trying to dispose of them for the prices I paid. Carriage users have had their ideas altered by the influence of the motor car body, and we have got to give them something fresh. Look at these carriages here," he continued, and we gazed upon a fairly full show-room, "well, I am building half as many again with many refinements and novelties of design in each."—Coachbuilders' Art Journal (London).

Dogs are quoted as symbols of fidelity, but business men don't hire dogs—nor dudes.

Digitized by Google

AUTOMOBILE INCORPORATIONS.

The H. E. Frederickson Automobile Co. has been incorporated in Omaha, Neb., with a capital stock of $100,000.

The Eberman Auto Appliance Co. has been incorpoarted in Chicago, Ill., with a capital of $15,000.

The Western Motor Car Co. has been incorporated in Colton, S. D., with a capital stock of $10,000.

The Roos Automobile Co. has been incorporated in Chicago, Ill., with a capital stock of $5,000.

The Citizens Motor Car Co. has been incorporated in Oklahoma City, Okla., with a capital stock of $25,000.

The Standard Automobile Supply Co., of Chicago, Ill., has increased its capital stock from $10,000 to $30,000.

Overland Motor Co., 1007 Marquette Building, Chicago, Ill., capital $1,000, to manufacture automobiles, by W. J. Bowman, C. W. Price and others.

W. D. Dayton Automobile Co., Chicago, Ill., capital $10,000, 1302 Chamber of Commerce, by Wilbur O. Dayton and others.

Emer Motor Lever Co., Chicago, Ill., capital $50,000, to manufacture automobiles, by W. W. Dixon and others.

Lemly-Wood-Brownlee Auto Co., San Antonio, Tex., capital $15,000, by F. H. Lemly, J. R. Wood and others.

Stoyle-Vogel Auto Co., Camden, N. J., to manufacture automobile coaches and cabs, capital $100,000, by Wilson H. Stoyle, Lewis G. Vogel and others.

Arlington Auto Co., Arlington, Mass., general automobile business, capital $25,000; president, H. M. Gort, 19 Medford street, and others.

Commercial Automobile & Motor Boat Exchange, Portland, Me., to manufacture and sell automobiles, capital $10,000; president, M. B. Gay; treasurer, F. L. Littlefield.

The Interstate Automobile Co., Muncie, Ind., capital $300,000, by J. M. M. Maring, F. C. Ball, E. B. Ball and others.

Page Machinery and Auto Co., Page, N. D., capital $10,000, by J. F. Collins, J. W. Comer and others.

Automobile Co. of America, Jersey City, N. J., capital $300,000, by A. C. Watson, 45 West 27th street, and others.

Overbaugh-Martin Motor Car Co., New York City, to manufacture automobiles, etc., capital $50,000, by D. C. Overbaugh and others.

Reo Automobile Co., 135 Adams street, Chicago, Ill., to manufacture automobiles, capital $2,500, by O. C. Owen and others.

Emery Motor Livery Co., Chicago, Ill., capital $50,000, to manufacture automobiles and operate a garage, by W. W. Dixon and others.

Mitchell Sales Co., Trenton, N. J., capital $50,000, to manufacture automobiles, by E. C. Martin, Plainfield; C. V. Ackers and J. W. Mosher, Trenton.

Buffalo General Mfg. Co., Buffalo, N. Y., capital $6,000, to manufacture automobiles, by James R. Kean and others.

National Motor Car Co., Jersey City, N. J., capital $2,000, to manufacture cabs, etc., by H. O. Coughlan and others.

Belp-A-Motor Co., New York City, to manufacture automobile attachments, capital $1,000, by M. S. Brown, 134 Underhill avenue, and others.

Ambulance Auto Co., Brooklyn, N. Y., to manufacture, use and lease automobiles, capital $2,000, by William H. Douglas, George C. Holmes and others.

Merchants' Automobile Company, Chicago, Ill., capital $50,000, to manufacture and deal in vehicles, by John C. Cumpeper and others.

Xardil Manufacturing Co., Utica, N. Y., capital $5,000, automobiles, by J. A. Xardell and others.

Universal Rim Co., Chicago, Ill., capital $100,000, to manufacture automobiles, by Charles G. Hawley and others.

Griebel Motor Car Company, Denver, Colo., capital $200,000, by Henry R. Griebel, B. Griebel and others.

The U. S. Automobile Co., Lorain, O., capital $50,000, by William H. Shibley and others.

MOVED TO BUFFALO.

Wm. Harland & Son announce the removal of their United States headquarters from New York City to Buffalo, N. Y., where they are located at Genesee street and Erie canal, and where Mr. H. Hagger, general manager for the United States and Canada, will be pleased to greet his friends and present and prospective patrons of the house.

Some men talk as though all their brains were in their tongues—some men's tongues convince you they haven't any brains. The sharpest fellow is he whose tongue proves his brains are where they ought to be.

Wants

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, five cents a word. Initials and figures count as words. Minimum price, 30 cents for each advertisement.

PATENTS.

Patents—H. W. T. Jenner, patent attorney and mechanical expert, 608 F street, Washington, D. C. Established 1883. I make an investigation and report if a patent can be secured and the exact cost. Send for full information. Trade-marks, registered.

SITUATIONS WANTED.

Wanted—Position by carriage trimmer. All around man on carriages and automobiles (autos preferred). Twelve years experience. A-1 reference. Address "A. B.," care The Hub, 24 Murray street, New York City.

Wanted—Position as assistant in draughting room of some reliable automobile firm, by a young man graduate of Carriage Builders' Technical School, who also has a fair knowledge of mechanical drawing as applied to gas engines. Address "C. J.," care The Hub, 24 Murray street, New York City.

Wanted—Position as foreman trimmer by a first-class man on limousines, landaulets and all automobile trimmings. Address "W. 200," care The Hub, 24 Murray street, New York City.

Wanted—Situation as foreman painter (carriage shop). Age 45. Plenty experience. Would like to correspond with those in need of foreman painter. Address "H.," care The Hub, 24 Murray street, New York City.

HELP WANTED.

Wanted—General superintendent for one of the largest carriage factories in the country. A man of experience and one able to get out good, salable work, and who is able to keep down shop costs. Address "A. B. C.," care The Hub, 24 Murray street, New York City.

Wanted—By wholesale house, salesman experienced in carriage and heavy hardware, also some experience in saddlery hardware, to cover northeastern New York and western Vermont. State age, salary expected and experience in above lines. Reference required. Address "C. & S. H.," care The Hub, 24 Murray street, New York City.

Wanted—Jobbers, dealers or manufacturers' agents to handle best quality medium grade vehicles on percentage. Address "Carriage Manufacturer," care The Hub, 24 Murray street, New York City.

Wanted—Salesman to handle a complete up-to-date line of vehicles on commission. Address "Carriage Factory," care The Hub, 24 Murray street, New York City.

FOR SALE.

For Sale—Carriage, wagon and automobile business. City of 70,000; growing rapidly. Established twenty-five years. High reputation and best trade of city. Central location. 130 feet frontage. Property will double in value in five years. 1,200 square feet floor space. Nets $3,000 to $5,000 per annum. Over 700 automobiles owned in the town. Capital needed $12,000 or more. Age and failing health reason for selling. Address "X. Y. Z.," care The Hub, 24 Murray street, New York, N. Y.

For Sale..A factory fully equipped with modern machinery and stock for carriage and wagon building and repairing; also automobile tire repair department fully equipped with latest vulcanizer; three-story brick building erected especially for this concern; cheap rent; to be sold on account of ill health of president. Centrally located in Omaha. W. J. Coad, trustee, First National Bank building, Omaha, Neb.

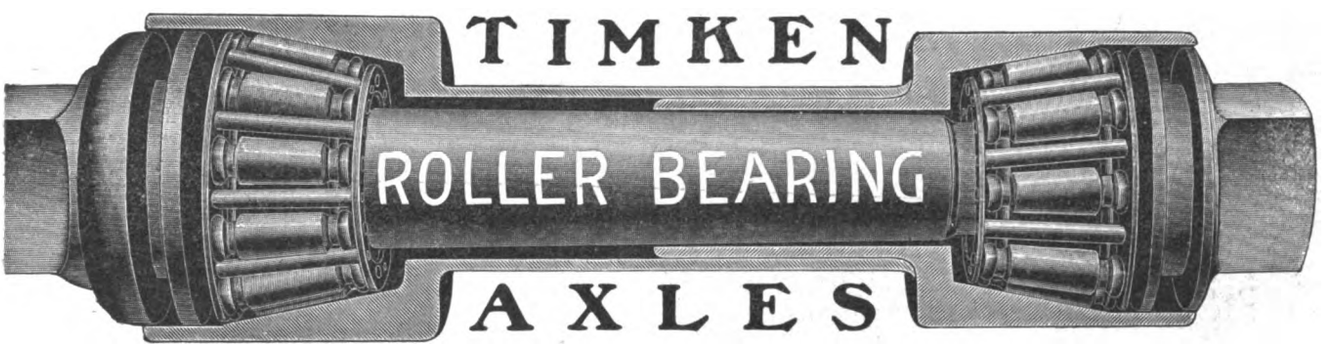
Digitized by Google

Timken Roller Bearing Axles

STAND SUPREME

as the most successful anti-friction axles for wagons and carriages throughout the entire world.

And the reason is due mainly to two factors—the Principles they are Built on and the quality of both Materials and Workmanship that go into their construction.



Timken Roller Bearing Axles

not only reduce the draft anywhere from **25 to 50 per cent.,** but last indefinitely with practically no signs of wear—**requiring oiling** about once a month.

ARE GUARANTEED FOR TWO YEARS

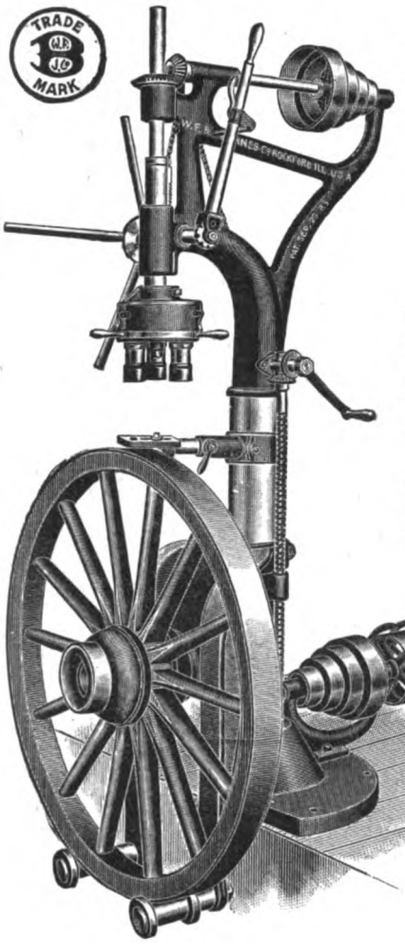
Facts, with catalogs and prices, upon request

The Timken Roller Bearing Axle Co.

CANTON, OHIO

BRANCHES: 10 E. 31st STREET, NEW YORK
429 WABASH AVENUE, CHICAGO

Digitized by Google



A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

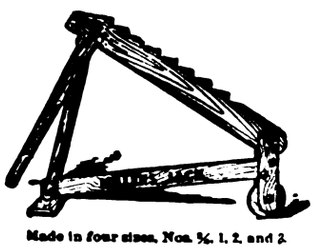
Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.
745 THIRD AVE., BROOKLYN, N. Y.



Made in four sizes, Nos. ¾, 1, 2, and 3.

JACKS FOR BUGGIES AND WAGONS

Miller Patent Wagon Jack Made by

J. V. HANKINSON,

Successor to THOS. MILLER,

FRANKLIN, OHIO.

Write for particulars and prices.

INDEX TO ADVERTISEMENTS.

American Roller Bearing Fifth Wheel Co..... 12
American Wood Block Co..... 18

Ball Buggy Top Co..... 14
Bannerman, F..... 18
Barnes & Co., W. F. & John..... 12
Bentel & Margedant Co..... 6
Bertram & Lamoreaux..... 20
Bimel-Ashcroft Co.....3d cover
Bradley & Son, C. C..... 21
Buggy Car Co..... 18

Central Bureau of Engraving..... 14
Columbus Bolt Works.....4th cover
Consolidated Rubber Tire Co..... 2
Cortland Forging Co..... —
Crane & MacMahon.....2d cover

Dalzell Axle Co..... 22
Decker, J. C..... 20
Devoe, F. W., & Raynolds Co., C. T.....3d cover

Eberly & Orris Mfg. Co..... 21
Eccles Co., Richard..... 10
English & Mersick Co., The..... 5

Fitch Gear Co..... 21
Fairfield Rubber Co..... 18

Gifford & Son, John A..... 13
Goodrich Co., B. F., The..... 17
Goodyear Tire and Rubber Co..... 4

Halsey & Smith..... —
Hankinson, J. V..... 12
Harland & Son, Wm..... 1
Hoopes Bro. & Darlington, Inc.....2d cover
Howell & Co., T. P..... 19

Indianapolis Bolster Spring Co..... 20

Jones & Co., Phineas..... 13

Keystone Forging Co.....13
Kokomo Rubber Co.....4th cover
Koller & Co., J. B.....16

Landsman Motor Co..... 14

Masury & Son, John W..... 2
McKinnon Dash Co..... 4th cover
Metal Stamping Co..... 15
Miller Bros..... 16

National Spring and Wire Co..... 20

Palm, Fechteler & Co.....2d cover
Parry Mfg. Co..... 3
Porter, H. K..... 20

Russell, Burdsall & Ward Bolt and Nut Co..... 22

Schubert Gear Co., August..... 16
Sheldon Axle Co..... 21
Smith & Co., Edw..... 5
Spring Perch Co..... 13
Standard Oil Cloth Co..... 3
Standard Varnish Works..... 3
Stein Double Cushion Tire Co..... 5
Studebaker Bros. Mfg. Co..... 4

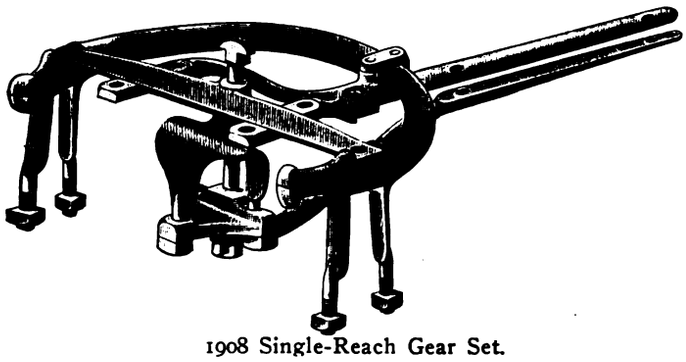
Timken Roller Bearing Axle Co..... 11
Tucker Wood Work Co..... 22

Valentine & Company..... 4

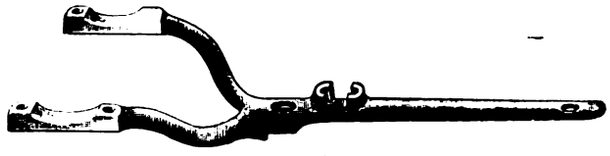
West Tire Setter Co.....3d cover
White, H. F..... 20
Wiesse & Co., Wm..... —
Wilcox Mfg. Co., D..... 13
Willey Co., C. A..... 6
Woodman, Joel H..... 21

Digitized by Google

FIFTH WHEELS—FORGINGS



1908 Single-Reach Gear Set.



Detachable Fork Perch Connection Used in 1908 Gear Set.

Greatest Line on Earth

WHEN ORDERING GEAR SETS BE SURE TO GET THE GENUINE

Wilcox Rear King-Bolt Gear Sets

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MANUFACTURING CO.

MECHANICSBURG, PENNSYLVANIA

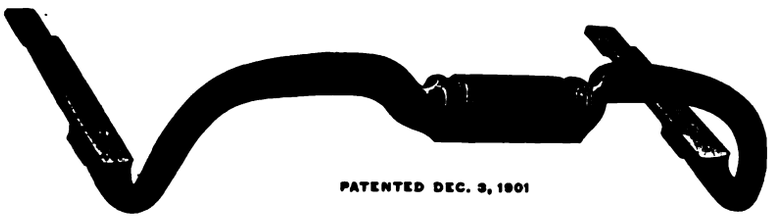
JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

Jones Wheels

BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.



PATENTED DEC. 3, 1901

THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland, Pa.

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges
EXCLUSIVELY FIRST-CLASS WORK
THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

Digitized by Google

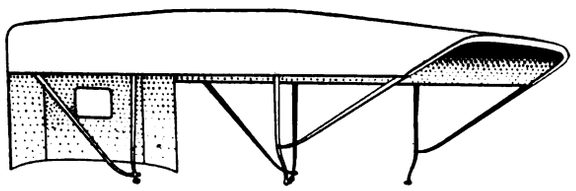
TOPS and Upholstering

FOR

AUTOMOBILES

AND

HORSE VEHICLES



MANUFACTURED BY

Ball Buggy Top Co.

YORK, PENNSYLVANIA

Build Your Own Auto

A GASOLINE ENGINE TO FIT ANY BUGGY or WAGON

LANDSMAN MOTOR CO.
908 Hickory St. ST. LOUIS, MO.
Write for Catalogue.

MANUFACTURERS

DESIRING FIRST-CLASS ILLUSTRATIONS OF THEIR PRODUCT, AT REASONABLE PRICES, SHOULD PERMIT US TO SUBMIT AN ESTIMATE.

Central Bureau of Engraving
COMMERCIAL ENGRAVERS
157-159 WILLIAM STREET, NEW YORK

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

Axles, Etc.
Dalzell Axle Co., South Egremont, Mass.
Sheldon Axle Co., Wilkes-Barre, Pa.
Sparks-With ington Co., The, Jackson, Mich.
Timken Roller Bearing Axle Co., Canton, Ohio.

Bodies, Seats, Etc.
Woodman, Joel H., Hoboken, New Jersy.

Bodies in the White.
Miller Bros., Amesbury, Mass.
Schubert Bros. Gear Co., Oneida, N. Y.

Bolts and Nuts.
Columbus Bolt Works, Columbus, Ohio.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

Carriage Cloths.
Wiese & Co., Wm., New York City.

Carriage Forgings.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

Carriage Hardware.
Gifford & Son, John A., New York.

Carriage Goods.
English & Mersick Co., New Haven, Conn.
Fairfield Rubber Co., Fairfield, Conn.
Gifford & Son, John A., New York.

Dashes, Fenders, Rails, Etc.
McKinnon Dash Co., Buffalo, N. Y.

Engraving.
Central Bureau of Engraving, New York City.

Fifth Wheels.
American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

Finished Vehicles.
Studebaker Bros. Mfg. Co., South Bend, Ind.

Hubs.
American Wood Block Co., The, Delphos, Ohio.
Koller & Co., J. B., Mechanicsburg, Pa.

Jacks.
Hankinson, J. V., Franklin, O.

Lamps.
Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

Leather.
Howell & Co., T. P., Newark, N. J.

Machinery and Tools.
Barnes Co., W. F. & John, Rockford, Ill.
Bentel & Margedant Co., Hamilton, Ohio.
Defiance Machine Works, Defiance, Ohio.
G.-L. Economizer Co., The, New York.
Maxwell & Fitch Co., The, Rome, N. Y.
Porter, H. K., Everett, Mass.
West Tire Setter Co., Rochester, N. Y.

Miscellaneous.
Bertram & Lamoreoux, Detroit, Mich.
Standard Oil Cloth Co., New York.

Ornaments.
Palm, Fechteler & Co., New York, N. Y.

Rubber Tires.
Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, O.
Goodyear Tire and Rubber Co., Akron, O.
Kokomo Rubber Co., Kokomo, Ind.
Stein Double Cushion Tire Co., Akron, O.

Shaft Couplings and Anti-Rattlers.
Bradley & Son, C. C., Syracuse, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Metal Stamping Co., New York City.

Springs and Gears.
Cooper, J. A. & D. P., Struthers, O.
Fitch Gear Co., Rome, N. Y.
Indianapolis Bolster Spring Co., Indianapolis, Ind.
National Spring and Wire Co., Albion, Mich.
Schubert Bros. Gear Co., Oneida, N. Y.
Spring Perch Co., Bridgeport, Conn.

Spokes.
Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.
Koller & Co., J. B., Mechanicsburg, Pa.

Trimming Materials.
Stevens & Sackett Co., New Haven, Conn.

Varnishes, Paints and Japans.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Harland & Son, Wm., London and New York.
Masury & Son, John W., New York and Chicago.
Pierce Co., F. O., N. Y. City.
Smith & Co., Edw., N. Y. City.
Standard Varnish Works, New York City.
Valentine & Co., New York, Chicago, Boston, Paris.
Willey Co., C. A., Hunter's Point, New York City.

White Lead.
Eagle White Lead Co., Cincinnati, Ohio.

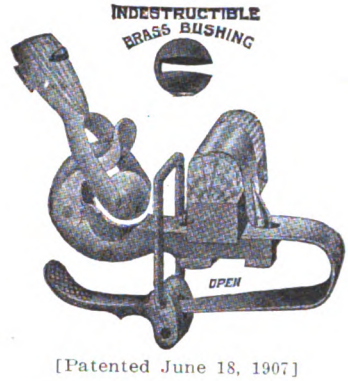
Wheels.
Crane & MacMahon, New York.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.

Wheel Stock, Bent Wood, Etc.
Crane & MacMahon, New York.
Koller & Co., J. B., Mechanicsburg, Pa.
Tucker Wood Work Co., Sidney, Ohio.

Digitized by Google

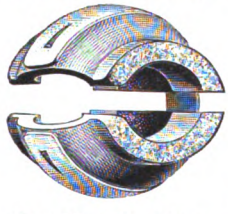
The Hannan Shaft Coupler

The Only Ball-Bearing Coupler Equipped with Brass Bushings. Will Outwear Any Vehicle.



[Patented June 18, 1907]

Brass bushings on ball-bearing couplers are the ideal bushings and destined to become the bushings of the future because they are practically indestructible and cannot become lost. Everybody long since condemned the leather bushings as a miserable make-shift. They wear out readily and are easily lost.



Our New Bushing.

We also furnish the Hannan Coupler with Rawhide Bushings cupped to shape, attached with a spring metal fastening (see illustration) which holds the bushings firmly on the ball and prevents it being lost. This is a vast improvement on others trying to attach it with a flimsy wire ring.

Write for Samples and Prices

SOLE MANUFACTURERS

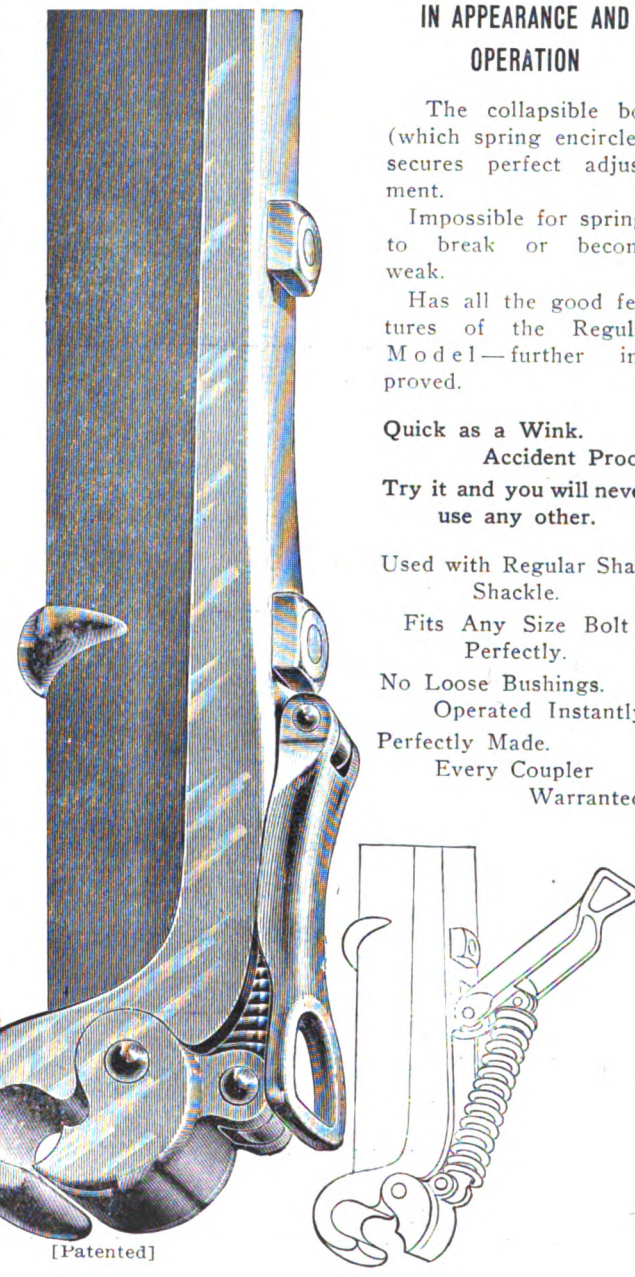
Metal Stamping Company, New York.

THE PERFECTED MODEL

OF THE

Standard Coupler

IS ABSOLUTE PERFECTION IN APPEARANCE AND OPERATION



[Patented]

The collapsible bolt (which spring encircles) secures perfect adjustment.

Impossible for springs to break or become weak.

Has all the good features of the Regular Model—further improved.

Quick as a Wink.
Accident Proof.
Try it and you will never use any other.

Used with Regular Shaft Shackle.

Fits Any Size Bolt Perfectly.

No Loose Bushings.
Operated Instantly.

Perfectly Made.
Every Coupler Warranted.

Send for New Catalogue containing over Four Hundred [400] devices used by the Carriage and Wagon Trade.

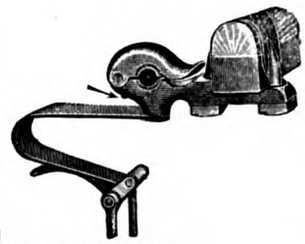
Digitized by Google

Eccles Ball Bearing Couplings

ALL OUR COUPLINGS ARE SHIPPED OUT WITH TWO PIECE BUSHINGS, FASTENED IN THE COUPLINGS

WHEN BUSHINGS ARE WORN OUT BY LONG USE, THEY CAN BE INSTANTLY REPLACED AND FASTENED INTO THE SOCKET BY OUR SPECIAL PROCESS





Patented Nov. 25, 1902.
Patented June 11, 1907.

THE SPRING IS PIVOTED AT THE FRONT SO THAT IT CAN BE TURNED OUT OF THE WAY OF THE WRENCH WHILE CLIPPING COUPLING TO THE AXLE.

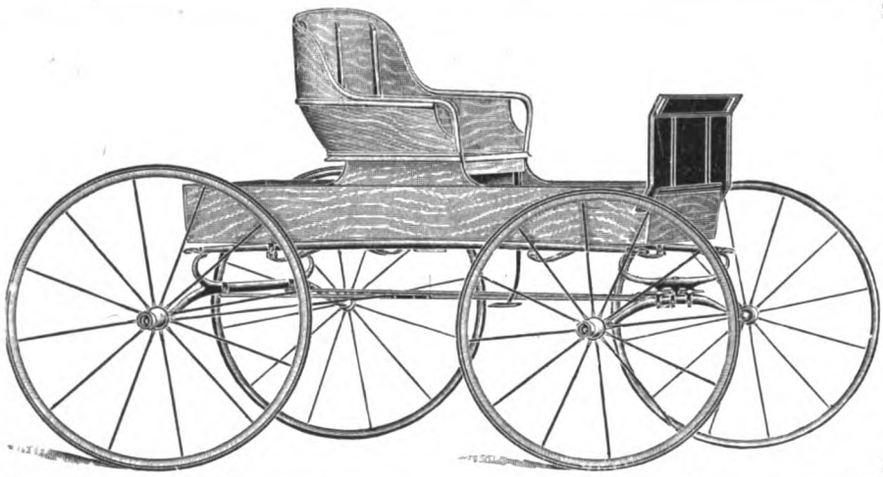
No Lost Bushings when you Use Our Couplings

We Make a Full Line of Carriage and Wagon Forgings

RICHARD ECCLES COMPANY

Catalogue No. 15 is our latest

AUBURN, NEW YORK



No. 215

SIDE BAR ROAD WAGON

ATTRACTIVE, ROOMY and POPULAR

One of our thirty styles that enjoy the call of live builders. Have you seen the latest in cutunders? If interested, see us.

We also build forty different types of gears and make a specialty of tops and trimmings.

WORK-IN-THE-WHITE

Would you like our catalogue?

AUGUST SCHUBERT GEAR CO.

ONEIDA, N. Y.

J. B. Koller & Company

Manufacturers of all kinds and sizes of

Finished Spokes and Bent Rims

Also all kinds of

SLEIGH, SLED AND BOB SLED RUNNERS

MECHANICSBURG, PA.

MILLER BROTHERS

Builders of

CARRIAGES

IN THE WHITE

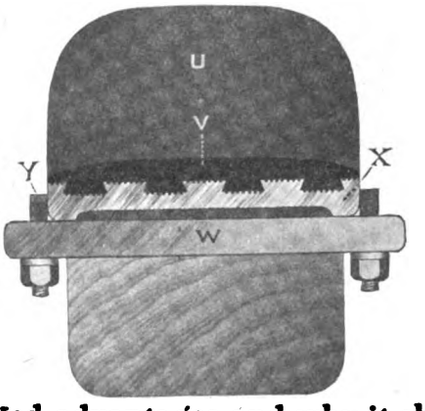
AND

Automobile Bodies

AMESBURY, MASS.

Digitized by Google

The Goodrich "WIRELESS" Motor Truck Tire



Wherein it possesses marked advantages and why it should appeal favorably to every user of Motor Trucks.

The tire consists of three factors: A special steel base (X) with dove-tailed grooves on the top surface; a hard rubber sub-base (V) which is inseparably united with the steel base; and a soft rubber tread (U) or tire proper, inseparably vulcanized upon the hard rubber sub-base. The tire is held in place on the felloe-band (W) by means of lugs (Y) on either side of the steel base, and a key on the felloe band which fits into a key seat on the steel base of the tire, and prevents circumferential movement. Thus the fastening point of the "Wireless" tire is steel to steel and absolutely secure.

ADVANTAGES:

The Goodrich "Wireless" tire affords the following advantages over all other type of motor truck tires:

(1) **Increased mileage,** because it affords a maximum external abrasion without affecting its fastening to the wheel.
(2) **Decreased cost per mile,** because it will give more mileage in proportion to its cost than any other rubber truck tire.
(3) **Freedom from repairs,** because the component factors form an inseparable unit and thus eliminate the usual hinging action of the rubber over internal metal fastenings.
(4) **Simpler method of applying,** because no complicated machine is necessary. This can be quickly and easily done with simple tools which we furnish.
(5) **Better service from the dual type,** because of decreased width of tread over all, affording maximum contact with road surface, and more perfect distribution of weight upon the spokes.
(6) **Adaptability to standard wheel sizes,** because the Goodrich "Wireless" tire may be applied to any wheel at present made for solid rubber motor truck tires.

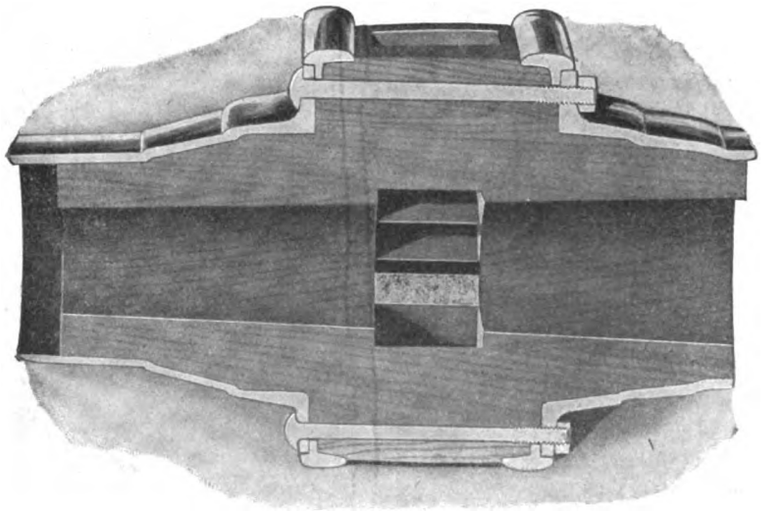
Information regarding sizes, prices, discounts, etc., upon application.

The B. F. Goodrich Company
Akron, Ohio

BRANCHES IN ALL LARGE CITIES.

Digitized by Google

The American Wood Block Co., Delphos, O.



SECTIONAL VIEW.

Hub Blocks

Green—Air and Kiln Dried. Sold by grade or timber run. Compressed blocks or otherwise. 3 in. to 12 in. diameter. Stock kept up to standard quality and ready for shipment at all times.

GILLETTE'S

"IDEAL"

HUB

It Stands the Racket

The **IDEAL** hub makes the strongest wheel. Repairs are less than on any other style; actual use has proven these facts.

IDEAL is metal protected, wood to wood center, means elasticity; simplicity of construction, easily and quickly repaired, driven spokes best of all, no metal to corrode.

IDEAL has the patented inverted flange that prevents lateral strain.

IDEAL means less tire resetting.

Try it—it is guaranteed.

We want the wheel makers to use the **IDEAL** in their wheels.

The American Wood Block Co.

DELPHOS, OHIO

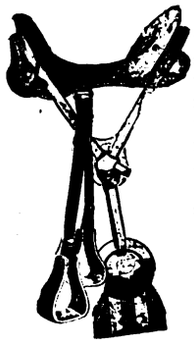
HUB BLOCKS HUBS DIMENSION STOCK

The Fairfield Rubber Co.

Manufacturers of Carriage Cloth, Imitation Leather, etc. For Automobiles and Carriages

Fairfield - - - Connecticut

6,000 U. S. ARMY McCLELLAN SADDLES



from **Government Auction Sale**, on change of regulation from black to russet leather coverings. **Genuine Rock Island Arsenal made** trees, fine black leather covered with brass rings and mountings, coat and stirrup straps, raw hide cinch girth, large tread wood stirrups, in second hand, serviceable order. **The Strongest, Best and Easiest Riding Saddle Made.** For a limited time we offer these fine saddles at the bargain price of **$4.95** each with trade discount for case lots. Our 292 page illustrated catalogue and supplement, giving full particulars of our immense stock of **Army and Navy Auction Sale Bargains,** mailed for 15 cents (Stamps).

FRANCIS BANNERMAN, 501 Broadway, N. Y. City

The most power to the weight car of any of this type now on the market.

SIMPLE, DURABLE AND RELIABLE

Four years of success. Write for catalog and prices



THE BUGGYCAR CO.

ARMORY AND JOHN STREETS

CINCINNATI :: :: :: :: OHIO

Digitized by Google

LION BRAND

T. P. HOWELL & CO. LEATHER ESTABLISHED 1840 NEWARK, N.J.

CARRIAGE AUTOMOBILE

AND

LEATHER

FOR CUSTOM AND WHOLESALE TRADE



"The King of Leather"



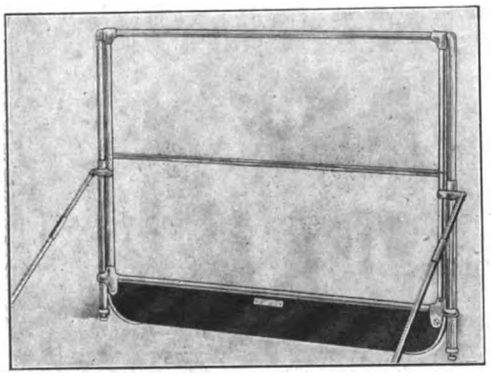
T.P.HOWELL & CO

NEWARK, N.J., U.S.A.

THE HUB. CURLEY

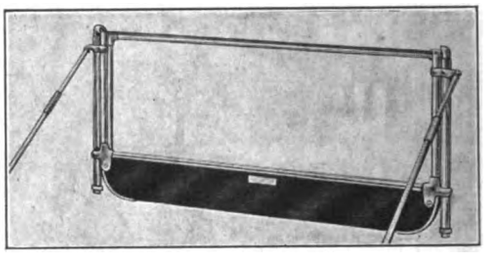
Digitized by Google

WILL NOT RATTLE—TELESCOPE WIND SHIELD





Try one and be convinced. Get a Wind Shield that is all we claim for it—absolutely the best on the market; one for which you need never make an apology; one that is not only a Wind Shield but an improvement to any car.





BURTRAM & LAMOREAUX,

72 Fort Street East, Detroit, Mich.

Our Carriage or Spring Edge Cushion Frame



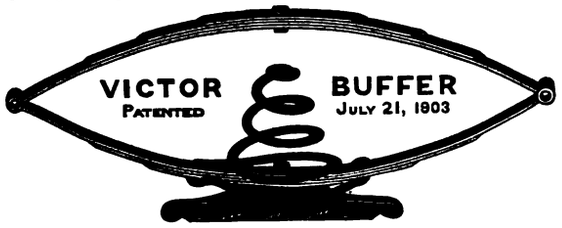
Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.

NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

For Weak or Overloaded Springs.

VICTOR STEEL SPRING BUFFERS

Save wagon, prevent breakdowns, and add materially to the carrying capacity. If your dealer does not have them write to us direct.



Made in Four Sizes: 0, 1 1-4 in. spring & under; 1, 1-4 in. to 1 1-2 in. spring; 2, 1 1-2 in. to 2 in. spring; 3, 2 in. to 2 in. spring.

Carrying capacity of each spring: No. 0, 400 lbs.; 1, 750 lbs.; 2, 1000 lbs.; 3, 1250 lbs.

Manuf'd by INDIANAPOLIS BOLSTER SPRING CO.
INDIANAPOLIS, INDIANA.

BRAZING SLEEVES

For Putting on Rubber Tires.
No Filing or Scarfing.



LINED UNLINED

H. F. WHITE, 111 E. Pearl St., Cincinnati, O.

HEADQUARTERS FOR CARRIAGE BUILDERS.

Let us offer you the most delightful hotel accommodation at moderate cost.

HOTEL EMPIRE

B'way 63d St.

NEW YORK CITY



In the centre of everything worth while.

Restaurant noted for its excellent cooking, efficient service and moderate prices

Rooms (use of bath)..$1.50
Rooms (with bath).... 2.00
Suites (with bath)..... 3.50

FIVE MINUTES WALK TO SHOPPING AND AMUSEMENT CENTRES

All Street Cars—One Minute to "L" and Subway

Send for Guide of New York, Free **W. JOHNSON QUINN, Prop.**

BOLT CLIPPERS

PORTER PORTER PORTER

EVERETT, MASS. U.S.A.

CARRIAGE STRAPS

All kinds of strap work for carriage builders. Our capacity for work of this kind is practically unlimited. For quality and price we beat the world. Send sample and let us quote prices. -:- -:-

J. C. DECKER = = = = Montgomery Penna.

Please mention "The Hub" when you write.

Digitized by Google

THE BRADLEY SHAFT COUPLING



OPEN

Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME!

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1½ in. in section.

C. C. BRADLEY & SON, Syracuse, N. Y.



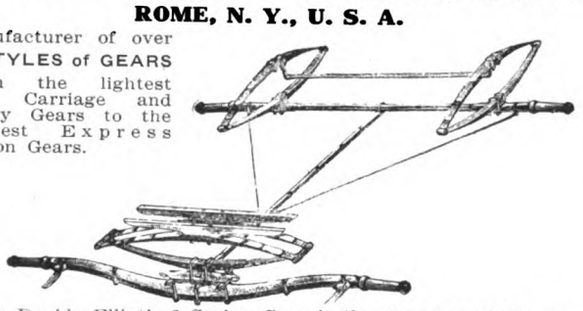
CLOSED

FITCH GEAR COMPANY

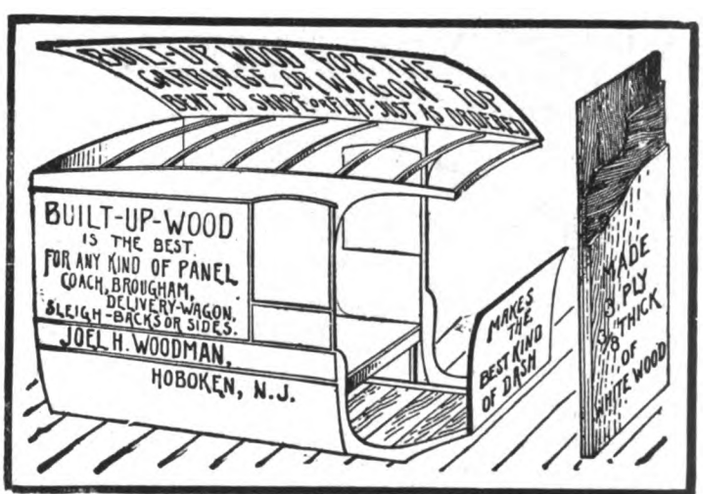
ROME, N. Y., U. S. A.

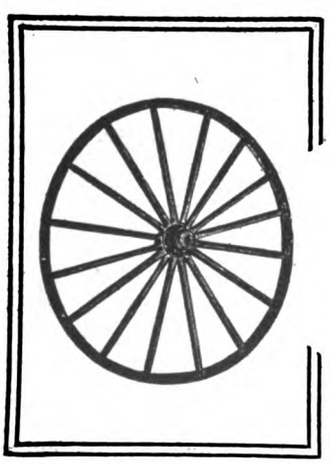
Manufacturer of over 40 STYLES of GEARS

From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.



The Double Elliptic 3-Spring Gear is the most practical combination business and pleasure gear on the market, and is equipped with Wrought or our Common Sense Short Turn Fifth Wheel. **Send for our No. 24 Catalogue.**





Time Has Told the Story!

Service and satisfaction always follow our rolling stock

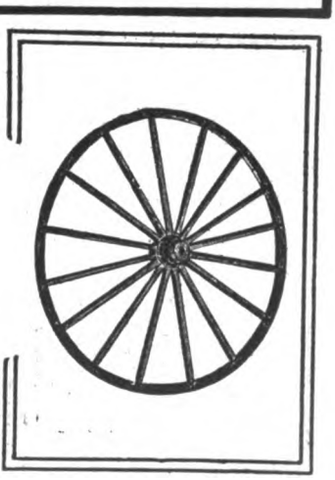
WHEELS

ALL KINDS—BEST QUALITY

Also RIMS and SPOKES

The Eberly & Orris Mfg. Co.

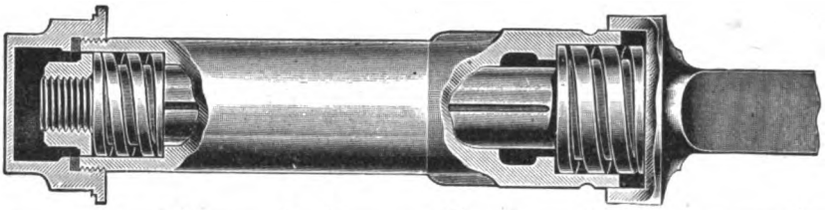
MECHANICSBURG, PA.



Please mention "The Hub" when you write.

Digitized by Google

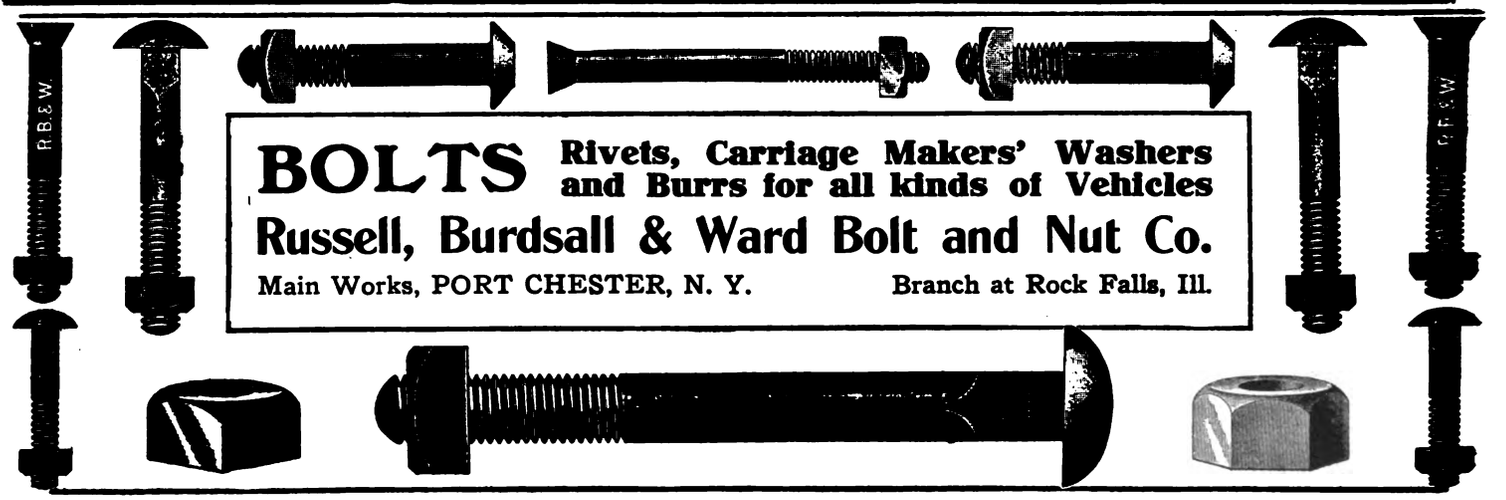
PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

DALZELL AXLE CO., South Egremont, Mass.

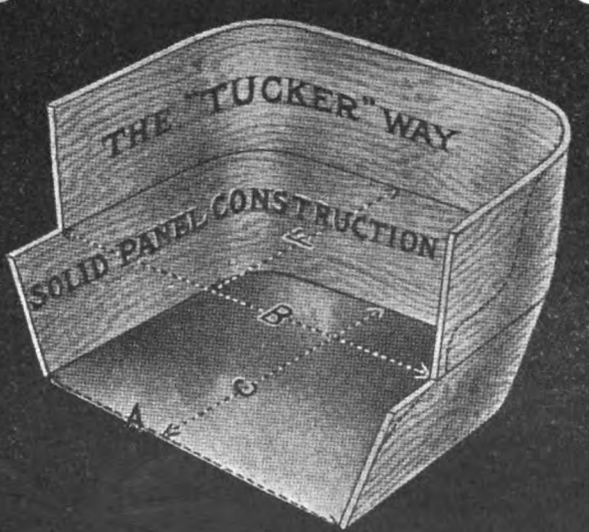


BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.

SOLID BENDINGS



MAKE FAULTLESS SEATS

CATALOG "H" SHOWS SIZES
WRITE FOR IT

THE TUCKER WOODWORK CO. SIDNEY, OHIO

HOTEL CUMBERLAND

NEW YORK

Southwest Cor. Broadway at Fifty-fourth St.

Near 50th St. Subway and 53d St. Elevated Stations and accessible to all surface lines.



Headquarters for Carriage and Automobile Trade

Ideal Location, Near Theatres, Shops and Central Park.

NEW AND FIREPROOF

STRICTLY FIRST-CLASS

All Outside Rooms. No Carpets. All Hardwood Floors and Oriental Rugs.

Ten Minutes Walk to Twenty Theatres.

Transient Rates, **$2.50** with Bath, and up.

Restaurant Unexcelled. Prices Reasonable.

SEND FOR BOOKLET.

HARRY P. STIMSON, *Formerly with Hotel Imperial.*

R. J. BINGHAM, *Formerly with Hotel Woodward.*

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

C. T. RAYNOLDS & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

Bimel-Ashcroft Manufacturing Company

Main Office, POPLAR BLUFF, MO.

Factories:
POPLAR BLUFF, MO.
MOREHOUSE, MO.
DERMOTT, ARK.
LOUISVILLE, MISS.

Foreign Correspondence Solicited.

SPOKES

OUR GROWTH

1902—1,310,241 Spokes

1903—3,240,185 Spokes

1904—5,485,748 Spokes

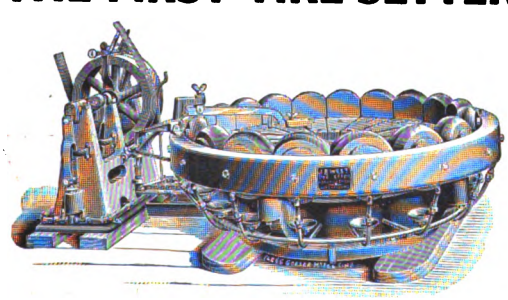
1905—7,845,653 Spokes

1906—7,927,759 Spokes

1907—7,748,839 Spokes

Our New Plant Increases Our Capacity to 12,000,000 Spokes

THE FIRST TIRE SETTER



you ever heard of was a "WEST"—probably, for they were on the market several years before any other and you are hearing more about them every year. Many of the older users are loudest in their praise. That's because they stand the test of time—they're made that way. Some of our Hydraulic machines have been **in use fourteen years** and are doing as good work now as when first installed. **Now,** we don't claim our machines are best simply because they have been longest on the market, **but because** we have been making a study of cold tire setting all these years and improving our machines as experience and observation taught us, and when you buy a **"West Hydraulic"** you get the benefit of this experience. Some people knowing our machines would set tires cold satisfactorily, thought some other would do as well—and the price was cheap—also machine. Now they wish they had bought a **"West Hydraulic."** **If you make a similar mistake it's your own fault.**

Buy a **"West Hydraulic"** and be happy. Hand or Power machines.

THE WEST TIRE SETTER COMPANY, Rochester, N. Y.

Digitized by Google



No. 140

WITH RAIL WELDED SOLID

McKINNON DASH COMPANY

CINCINNATI, O.
TROY, O.

BUFFALO, N. Y.

ST. CATHARINES
ONTARIO

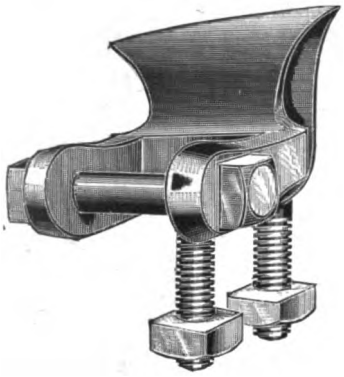
For a Moderate Priced Vehicle

OUR No. 140 WITH RAIL

Japanned or Plated

WILL OUTSELL ANY WORK WITH AN

OUT OF DATE PLAIN DASH



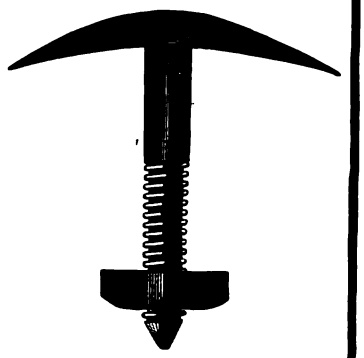
Skewed Shaft Couplings

Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips ⅝ or ¾ width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

1908 Catalog "H" on application.

COLUMBUS BOLT WORKS, Columbus, O.



Kokomo Solid Rubber Tires

¶ In rubber substance the Kokomo Solid Rubber Vehicle Tire is truly **SOLID.**

¶ Solid with the pure stock that has made them an exception to the ordinary tires of commerce.

¶ In Kokomo quality there is an established standard that is recognized as the highest ideal of tire construction. The Kokomo is a standard tire in every respect.

¶ Kokomo Tires always score in the running, and the longer the test the more convincing the results.

Kokomo Rubber Company

Kokomo, Indiana, U. S. A.

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

To renew the charge, book must be brought to the desk.

DATE DUE

Form 8543

Digitized by Google

UNIVERSITY OF MICHIGAN
3 9015 08004 8773





Digitized by Google

Digitized by Google